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ABSTRACT

Presented in the annotated bibliography are 547 citations (1972 - 1974) concerning prevention of and early intervention for cerebral palsy and related developmental disabilities. Entries are arranged alphabetically by author's name and usually include information on title, source, date, pagination, and a brief annotation. (CL)

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CEREBRAL PALSY AND RELATED DEVELOPMENTAL DISABILITIES--PREVENTION AND EARLY CARE

U.S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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An Annotated Bibliography

Volume IV

1974

(Includes Items Published from 1972 through 1974)

Compiled by

RAYMOND R. REMBOLT, M.D., and BETH ROTH, M.A.

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FOREWORD

Cerebral Palsy and Related Developmental Disabilities--Prevention and Early Care: An Annotated Bibliography, compiled by Raymond R. Rembolt, M.D., and Beth Roth, was sponsored by the United Cerebral Palsy Associations, Inc. It consists of four volumes: Volume I (1971) includes items published from before 1964 through 1971; Volume II (1972) includes items published 1968-1972; Volume III (1973) includes items published in 1972 and 1973; and Volume IV (1974) includes items published from 1972 through 1974. The project was supported partly by the Association and partly by the UCPA "Nationally Organized Collaborative Project to Provide Comprehensive Services for Atypical Infants and Their Families" USOE (Bureau of Education for the Handicapped)--Grant No. O-71-4492(616). Selection and compilation of the material took place mainly at the University Hospital School of The University of Iowa.

A panel of experts appointed by NCEMMH to review the bibliography recommended that NCEMMH arrange for its publication. Therefore, as a service to all personnel working with handicapped young children--educators, physicians, and researchers--NCEMMH has provided for its publication, and, with the assistance of the Ohio State University Press, for its nationwide distribution on a nonprofit cost recovery basis.

This is the first edition. The NCEMMH Reprint Series encompasses not only previously published materials which have gone out of print but also those which NCEMMH is publishing on behalf of another organization.

NCEMMH is funded by HEW, USOE Bureau of Education for the Handicapped, Media Services and Captioned Films, Contract Number OEC-300-72-4478. The contract is administered through the College of Education and the Research Foundation of The Ohio State University.

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PREFACE

Presented herein is the fourth volume of a series of annotated bibliographies concerned with cerebral palsy and related developmental disabilities in early childhood. The intended major emphasis pertains to prevention and early care of those children so involved. However, a few annotations of material that is only in some way closely related to the major emphasis are also included.

The four volumes in this series include more than 2,500 annotations which deal with the subject. Articles selected for annotation in Volume IV were chosen solely on the basis of their content. Interestingly, of those articles chosen, 75 percent were from authors not previously referred to in this series.

Articles included as annotations in Volume IV came from fifty-four professional periodicals. Eight of these were foreign publications. In addition, thirty-six published books constituted the other sources of pertinent articles. It is worthy of note that 87 percent of the annotations included in this volume were published in 1974.

It goes without saying that support in the preparation of Volume IV has come from several sources. Most annotations have been prepared by Mrs. Beth Roth. The typing and arranging of the material has been done mainly by Miss Bonnie Knowles. The site of preparation of this material for publication has been the University Hospital School at the University of Iowa. The authors of this volume are deeply grateful to those just mentioned as well as to others who have contributed to this project in many ways.

Raymond R. Rembolt
University Hospital School
University of Iowa

Iowa City, Iowa
December 11, 1975

1. Aantaa, K., and Forss, M.: "Determination of Biparietal Diameter by the Ultrasonic B-scan Technique," *Acta Obstetricia Et Gynecologica Scandinavica*, 53:121-124, 1974.

   The ultrasonic B-scan method was used to determine the biparietal diameter in 1,448 measurements on 1,062 unselected patients, who were in the gestational range of from 24 to 42 weeks. Methods are described. The gestational age which was calculated from these measurements was compared to the fetal age estimated from the last menstrual cycle. The following conclusions were reached based on the findings: "The use of the B-scan ultrasound technique has proved to be practicable for determination of the biparietal diameter. It is simple and quick. It involves no danger to the patient and is easy to repeat. The greater the number of determinations that can be made for the same patient, the more reliable is the result."

2. Abbie, Margaret: "Treatment of 'Minimal Brain Dysfunction,'" *Physiotherapy*, 60: 203-207, July, 1974.

   Terms used in this area are discussed in relation to the confusion that results when these terms are used interchangeably. Then individually and critically reviewed are several motor training programs used in the treatment of children with minimal brain dysfunction. These are the Ayres Method, the Doman-Delacato System, the Frostig Scheme, the Kephart Program, and the Swiss system of psychomotor education.

3. Abeson, Alan: "Movement and Momentum: Government and the Education of Handicapped Children," *Exceptional Children*, 39:63-66, September, 1972.

   Reported here are events which occurred in the early 1970's that reshaped the field of education for handicapped children. Included among these events are the passage of new state and federal legislation, the delivery of relevant attorney generals' opinions, significant court cases, and increased public awareness.

4. Abeson, Alan: "Movement and Momentum: Government and the Education of Handicapped Children. II.," *Exceptional Children*, 41:109-115, October, 1974.

   This article appears in the "Law Review" section of this serial. The author discusses some of the advances made by the government over the past two years (1972-1974) in the education of the handicapped child. State and federal law are considered separately. Litigation involving the right of handicapped children to education is also reviewed.

5. Abramovici, H.; Brandes, J.M.; Fuchs, K.; and Timor-Tritsch, I.: "Meconium During Delivery: A Sign of Compensated Fetal Distress," *American Journal of Obstetrics and Gynecology*, 118:251-255, January 15, 1974.

   Studied and compared were 80 parturients in whom meconium appeared after the rupture of the membranes and 80 control parturients who had clear amniotic fluid. Fetal scalp pH was determined in the meconium group. There were no significant differences found between the two groups with regard to Apgar score at one minute,

fetal outcome, or "number of interventions during delivery." When the 80 meconium cases were subdivided into those with thin and watery meconium and those with thick and solid meconium, no differences were seen between the two subgroups regarding "fetal scalp pH, fetal outcome, Apgar score, or the number of interventions during delivery." Findings in this and other related studies are discussed. "Our data support the assumption that the passage of meconium during delivery could be a state of compensatory fetal distress."

6. Adebonojo, Festus O., and Strahs, Susan: "Reducing the Lead Burden of Urban Ghetto Children," *Clinical Pediatrics*, 13:310-311+, April, 1974.

Blood lead levels were determined and compared in 22 ghetto children, ages 1 to 3 years, who were attending a Children and Youth Day Care Center and 15 matched control children, who were selected from a larger group of children "of similar ages from the same socioeconomic and demographic background." There was a statistically significant difference between the mean blood lead level of 18.9 μg/100 ml in the Day Care Center children and the 32 μg/100 ml mean level in the non-Day Care controls. Implications are considered.

7. Adlard, B.P.F.; Dobbing, John; and Smart, J.L.: "An Alternative Animal Model for the Full-Term Small-for-Dates Human Baby," *Biology of the Neonate*, 23:95-108, 1973.

A study is described in which rats were subjected to nutritional restriction from conception to five days of post-natal age (FNR - fetal and neonatal growth retardation). This group (FNR) thus served as a model for small-for-dates human infants. Another group of rats were restricted nutritionally from the period of 5 to 25 post-natal days (IR - infantile growth retardation). Both of these restricted rat groups were compared to control rats regarding body growth and neurological development. "Compared with well-nourished controls both restricted groups showed deficits in neurological maturation. Both brain weight and body weight in adulthood were significantly reduced by earlier growth restriction: these changes were less marked in FNR than in IR animals. Cerebellar weight was consistently reduced more than that of the remainder of the brain. Brain stem acetylcholinesterase activity in adulthood was significantly higher than normal in IR, but not in FNR animals." These findings are discussed.

8. Albrecht, H.; Bokelmann, J.; Morgenstern, J.; and Schmidt, H.: "Computed Dip-Parameters Derived from Digitized FHR-Curves. II. The Value of Descriptive Parameters," *Journal of Perinatal Medicine*, 2:260-267, 1974. (Series: For I See #327; for III see #423.)

The work presented in part II of this series is concerned with: "1. How do various dip-parameters behave in the cardiotocograms of normal newborns and of asphyxiated newborns? 2. Is the frequency distribution of certain dip-parameters a function of the lag-time or of the total area?" Some 1,115 unselected deliveries were monitored by cardiotocography (CTG) and retrospectively coded as described. The code was based on 15 identification characteristics and 19 clinical criteria, including a described "extended newborn asphyxia index." On the basis of this index, the 1,115 cases were divided into two groups, those with normal and those with pathologic indices. Those cases in which the CTG contained contraction-related decelerations (normal 105, pathologic 46) were further evaluated regarding

nine listed descriptive parameters. Findings are presented on the frequency distributions of these nine descriptive dip parameters and the dependence of the dip parameter from lag-time and area. Among the findings was "that 8 of the 9 selected descriptive dip-parameters were significantly different in their frequency distributions between a normal and a pathological groups."

9. Alden, Errol R.; Lynch, Sean R.; and Wenneberg, Richard P.: "Carboxyhemoglobin Determination in Evaluating Neonatal Jaundice," *American Journal of Diseases of Children*, 127:214-217, February, 1974.

Carboxyhemoglobin (HbCO) levels were determined as described in 10 infants with erythroblastosis fetalis due to Rh sensitization, 11 normal full term infants of nonsmoking mothers, 4 normal full term infants of mothers who smoked during labor, and 16 infants with hyperbilirubinemia of uncertain cause. The HbCO levels were found to be significantly higher both at birth and postnatally in the hemolytic disease group than in the normal infants of nonsmoking mothers. Although the HbCO levels in the cord blood of the hemolytic disease group did not correlate with the severity of the disease, the levels did correlate with the rate of rise in bilirubin and the necessity of exchange transfusion. With regard to the 16 infants having jaundice of uncertain cause, 9 infants had normal HbCO levels and no evidence of increased hemolysis, and 7 had elevated HbCO levels and "conditions likely to cause hemolysis." The findings indicated that "carboxyhemoglobin determination may be helpful in (1) predicting the need for exchange transfusion in erythroblastotic infants and (2) differentiating hemolytic from nonhemolytic causes of neonatal jaundice."

10. Aleksandrowicz, Malca K., and Aleksandrowicz, Dov R.: "Obstetrical Pain-Relieving Drugs as Predictors of Infant Behavior Variability," *Child Development*, 45:935-945, December, 1974.

The relationship between pain-relieving drugs administered during labor and delivery and neonatal behavior as determined by the Brazelton Scale was studied in 44 infants. The infants were tested eight times during the first month of their lives. Methods of statistical analyses are described in detail. "Habituation, Orientation, Cuddliness, and Smiles were among the items with large relationships. The tranquilizers, barbiturates, and the blocking agent succinylcholine were among the drugs implicated in the largest relationships, the latter perhaps due to its being used as an adjunct to deep anesthesia. Some of the relationships reached their peak on day 28, thus implying the possibility of persistent impairment of function." The results indicated "that (a) caution should be exercised in administering pain-relieving drugs during delivery in the absence of compelling medical indication and (b) studies of neonatal behavior should consider obstetrical medication as a potentially significant variable."

11. American Academy of Orthopaedic Surgeons. *Symposium on Myelomeningocele*. St. Louis, Missouri: C.V. Mosby, 1972. 317 pp.

"The contents of this volume are drawn from papers, exhibits, and round-table discussions given at the course on myelomeningocele produced by the Committee on the Care of the Handicapped Child of the American Academy of Orthopaedic Surgeons." The course was given in November, 1970, at Hartford, Connecticut. The contents

consist of 31 chapters presented in 8 parts: Part I: "Embryology, pathology, and evaluation of potential," Part II: "Evaluation and treatment of the neurospinal lesion at birth," Part III: "Hydrocephalus associated with myelomeningocele," Part IV: "Pathology and paralytic aspects of the urinary tract and the lower bowel," Part V: "Orthopaedic and developmental problems," Part VI: "Infection in the patient with myelomeningocele," Part VII: "Future of patients with myelomeningocele," and Part VIII: "The team." There are many photographs, reference lists, and an index.

12. American Academy of Pediatrics. Executive Board: "Early and Periodic Screening, Diagnosis, and Treatment," *Pediatrics*, 51:741, April, 1973.

Discussed are the ramifications of the 'Early and Periodic Screening, Diagnosis, and Treatment' section of the Title XIX amendments of the Social Security Act.

13. Amiel-Tison, Claudine: "Neurologic Problems in Perinatology," *Clinics in Perinatology*, 1:33-38, March, 1974.

Included among the neurologic problems discussed are the state of the brain in intrauterine growth retardation, brain damage occurring during labor in the full-term infant, and the current neurologic outcome in cases of birth injury, hypotrophy, and prematurity.

14. Amin-zaki, Laman; Elhassani, Sami; Majeed, Mohamed A.; Clarkson, Thomas W.; Doherty, Richard A.; and Greenwood, Michael: "Intra-Uterine Methylmercury Poisoning in Iraq," *Pediatrics*, 54:587-595, November, 1974.

Previous reports concerning the effects of prenatal exposure to methylmercury are noted. In 1972 there was a large epidemic of methylmercury poisoning in Iraq which was caused by the ingestion of home-made bread made from wheat that had been treated with a methylmercury fungicide. Fifteen mother-infant pairs from this epidemic, which were exposed to methylmercury during pregnancy, were evaluated and followed. Labortory and clinical evaluation methods are described, and clinical manifestations are listed in individual charts for the mothers and for the infants. "In all cases except one, the infants' blood mercury levels were higher than their mothers' during the first four months after birth. Our results indicate that methylmercury passes readily from mother to fetus and that neonatal blood mercury levels are maintained through ingestion of mercury in mothers' milk. Clinical manifestations of methylmercury poisoning were evident in six of 15 mothers and in at least six of 15 infants. In five severely affected infants there was gross impairment of motor and mental development." These and other findings are discussed.

15. Amstey, Marvin S., and Monif, Gilles R.G.: "Genital Herpesvirus Infection in Pregnancy," *Obstetrics and Gynecology*, 44:394-397, September, 1974.

Data is presented on 29 patients in whom "herpetic vulvovaginitis with characteristic lesions were identified by virus isolation and identification." Of these 29 women, 15 had shed virus at some time during their pregnancy but were free of virus at delivery, and 14 were actively shedding the virus at delivery. There was no neonatal morbidity or mortality in the 15 cases in the former group, and

all patients delivered vaginally. Twelve of the 14 patients in the latter group were delivered by cesarean section. There was one neonatal death and one infant who had neurologic handicap in this group. Fourteen other cases from the literature are also analyzed. The data demonstrated "that elective cesarean section prior to or less than 4 hours after ruptured membranes will significantly reduce the danger of neonatal herpesvirus infection."

16. Anders, Thomas F.: "The Infant Sleep Profile," *Neuropädiatrie*, 5:425-442, November, 1974.

The literature on the polygraphic study of sleep is reviewed. Then described is the concept of neonatal sleep being comprised of four "distinct, yet interdependent dimensions." These dimensions of sleep are "sleep/wake proportions, organization/disorganization of sleep states, periodicities of sleep/wake states and events; and, transition sequences of sleep/wake states." Each of these is defined. In the Infant Sleep Profile, the large amount of data accumulated from the polygraphic recording of these four dimensions are processed and reduced so that the dimensions can be compared with each other and compared between infants. "Hopefully, the Infant Sleep Profile represents a prototype of a clinically relevant, neurodiagnostic indicator of central nervous system integrity in the newborn infant."

17. Anderson, J.M.; Brown, J.K.; and Cockburn, F.: "On the Role of Disseminated Intravascular Coagulation in the Pathology of Birth Asphyxia," *Developmental Medicine and Child Neurology*, 16:581-591, October, 1974.

Findings, both clinical and pathological, are presented for a necropsy study of eight infants, "who had developed consumption coagulopathy following severe asphyxia at birth." Fibrin thrombi were seen in five cases with their distribution explained. The results "suggest that fibrin thrombus formation and consumption coagulopathy in infants asphyxiated at birth are secondary to tissue damage in organs which are susceptible to ischaemia during circulatory disorders."

18. Andrews, Hilary: "Adapted Artist's Tool," *Physical Therapy*, 54:748, July, 1974.

The uses of an artist's flexible ruler with patients having hand disabilities are described. This tool can be of assistance in treating such patients "by stimulating proprioception, kinesis, and eye-hand control, as well as increasing finger-wrist-forearm coordination and mobility." The tool is useful for both exercise and creativity. An eight-year-old boy with right-sided hemiplegia is pictured using this ruler. "He used his affected right hand to make a design with the ruler and, in his art work, he drew with his left hand and steadied the ruler with his right."

19. Annegers, John F.; Elveback, Lila R.; Hauser, W. Allen; and Kurland, Leonard T.: "Do Anticonvulsants Have a Teratogenic Effect?" *Archives of Neurology*, 31:364-373, December, 1974.

Problems involved in epidemiologic studies of the possible teratogenic effects of anticonvulsants are discussed, and the literature in the area of anticonvulsants and teratogenicity is reviewed. Also considered is the teratogenic

mechanism of anticonvulsants. Then a retrospective study conducted at the Mayo Clinic is described in which the incidence of malformations was determined in 284 births to 138 women who had epilepsy. Of these 284 births, 26 were to women whose epilepsy was in remission as defined and 61 births were to women prior to the onset of a convulsive disorder. No malformations occurred in these two groups of births. There were 56 births to epileptic women not taking anticonvulsants at all or not taking them during the first trimester of pregnancy. Of these 56 births, there was one case of malformation. There were 141 births to epileptic women who were taking anticonvulsants during the first trimester of pregnancy, and of these 141, there were ten babies with malformations which are described. Further findings are reported regarding the anticonvulsant medications taken, familial aspects, the incidence of mental retardation, and mortality. Conclusions are presented. "The findings of this survey of epilepsy and pregnancies among Mayo Clinic patients are consistent with those reported by others that there is an increased incidence of congenital malformations in the children of women taking anticonvulsants."

20. Archimaut, Gaston; Belizan, Jose Miguel; Ross, Newton A.; and Althabe, Omar: "Glucose Concentration in Amniotic Fluid: Its Possible Significance in Diabetic Pregnancy," *American Journal of Obstetrics and Gynecology*, 119:596-602, July 1, 1974.

In order to further study the concentration of glucose in amniotic fluid during normal and diabetic pregnancies, amniotic fluid samples were obtained between one and six days prior to delivery in 16 women having normal pregnancies (controls) and 19 diabetic patients. Maternal venous blood samples were also obtained simultaneously from 20 patients. The glucose concentration was determined as described, and Apgar scores were determined in all neonates at one and five minutes of life. There was no significant correlation found in either group between gestational age and the glucose concentration in amniotic fluid (GCAF). GCAF was found to be higher in the diabetic group than in the control, and maternal glycemia was also higher in the diabetic group. A significant inverse correlation was seen between GCAF and Apgar scores. Results are discussed. "These findings suggest that amniotic fluid is a memory-like system where glucose once entered in the amniotic sac leaves it very slowly. Therefore, a given GCAF value would reflect not only the simultaneous maternal glycemia but also that which existed previously. How long amniotic fluid is capable of maintaining this kind of memory is still unknown."

21. Asensio, Stanley H.: "Human Fetal Surgery," *Clinical Obstetrics and Gynecology*, 17:3:153-170, September, 1974.

The following fetal surgical procedures are reviewed, including in most cases the indications for the procedure, the methods, and the complications: amniocentesis, amniography, fetal transfusion, placental biopsy, and amnioscopy.

22. Assali, Nicholas S., ed.: *Pathophysiology of Gestation.* New York: Academic Press, 1972. 3 volumes: Volume I - Maternal Disorders, 617 pp.; Volume II - Fetal-Placental Disorders, 357 pp.; Volume III - Fetal and Neonatal Disorders, 556 pp.

Volume I of this 3 volume set is concerned with maternal disorders. Volume II contains chapters dealing with fetal-placental disorders including disorders of placental transfer, disorders of placental endocrine functions, amniotic fluid

disorders, genetic disorders of growth and development, and environmental factors that affect growth and development. In Volume III fetal and neonatal disorders are discussed, including disorders of circulation, respiration, the endocrine system, and disorders of water, electrolyte, and acid-base balance. Also considered in Volume III are fetal and neonatal disorders of the nervous system, disorders of the immunological mechanisms, disorders of hematopoiesis, and disorders of bilirubin metabolism. In all 3 volumes, systems of the body, rather than specific disease states, are covered regarding both the normal functions of the body systems and how these functions are altered in various diseases. The volumes are interdisciplinary in nature with chapters written by contributors. Photographs and reference lists are numerous, and each volume has a subject and an author index.

23. Bard, Harry: "The Effect of Placental Insufficiency on Fetal and Adult Hemoglobin Synthesis," *American Journal of Obstetrics and Gynecology*, 120:67-72, September 1, 1974.

In order to determine the cause of the increase in fetal hemoglobin (HbF) synthesis which has been found at birth in term infants small for gestational age (TSGA), the proportion of HbF and adult hemoglobin (HbA) synthesized both at birth and postnatally (4-6 weeks of age) was investigated in a small group of described TSGA infants who were born to toxemic mothers. "The results were compared to preterm infants appropriate in weight for gestational ages (PRAGA) having similar birth weights as the TSGA infants and infants appropriate in weight for gestational ages having the same length of gestation as the TSGA infants (TAGA)." Findings are presented and discussed. "This study demonstrates that when fetal growth is severely compromised by placental insufficiency it results in an increased fetal hemoglobin synthesis. Once the fetus is removed from this compromising environment, there is a rapid switchover toward adult hemoglobin synthesis."

24. Barr, Mason, Jr.; Poznanski, Andrew K.; and Schmickel, Roy D.: "Digital Hypoplasia and Anticonvulsants During Gestation: A Teratogenic Syndrome?" *Journal of Pediatrics*, 84:254-256, February, 1974.

Three case reports of infants having distal extremity hypoplasia and nail dysplasia and who were born to mothers who took anticonvulsants during pregnancy are presented. The possible teratogenic association between the anticonvulsants and the malformations is discussed.

25. Baskett, T.F., and Koh, K.S.: "Sinusoidal Fetal Heart Pattern: A Sign of Fetal Hypoxia," *Obstetrics and Gynecology*, 44:379-382, September, 1974.

A case displaying this fetal heart pattern in association with severe fetal hypoxi is presented. "Obviously 'sinusoidal' fetal heart patterns require further study before their prognostic significance can be evaluated. At the present time it would seem reasonable that their presence should indicate the need for scalp sampling and biochemical analysis of the fetus. The presence of a marked 'sinusoidal pattern, as described in this report, warrants immediate delivery of the fetus."

26. Battle, Constance U.: "Disruptions in the Socialization of a Young, Severely Handicapped Child," *Rehabilitation Literature*, 35:130-140, May, 1974.

There are two obstacles or barriers to the normal process of socialization for the young handicapped child. These are the obstacle that results from the physiologic limitations of the child and the obstacle that results from the psychological and social limitations of the child. Aspects of these barriers are discussed with the young cerebral palsied child used as an example. The socialization process in the normal infant and young child is reviewed, and disruptions in this process that occur with the handicapped child are noted. With regard to the discussion of the socialization process of the infant, mother-infant relationships and their disruption with the handicapped infant are considered. With regard to the discussion of the socialization process in the young child, the following aspects are discussed: "Mechanisms of socialization, aspects of human

behavior in the normal young child that must be socialized, biologic needs, and socialization; general modes of interacting with the environment; dependency and interdependence; emergence of a clear body-image, self-concept, self-esteem, and role-learning, particularly the sex role; imitation; relationships with the siblings and with the peer group; and opportunities for play and for participation in interpersonal relationships. Each of these aspects of early childhood socialization is markedly altered in the handicapped child." It is noted that these barriers increase as the child grows older.

27. Bax, Martin: "Annual Meeting of the American Academy for Cerebral Palsy," *Developmental Medicine and Child Neurology*, 16:247-251, April, 1974.

The events and the individual presentations made at this meeting are summarized. The meeting was held in Washington, D.C., in December, 1973, and was the 27th Annual Meeting of the Academy.

28. Begab, Michael J.: "The Major Dilemma of Mental Retardation: Shall We Prevent It? (Some Social Implications of Research in Mental Retardation)," *American Journal of Mental Deficiency*, 78:519-529, March, 1974.

This article is the Presidential address of the American Association on Mental Deficiency which was delivered by the author at the Association's Annual Meeting in Atlanta in May of 1973. Topics discussed include the incidence and prevalence of mental retardation in relation to preventive efforts that have been made; factors that may lead to an increase in incidence, including by-products of our technologically sophisticated society such as drugs, pollution, etc.; the present state of our knowledge and technology pertaining to mental retardation, including specifically knowledge on prematurity and the low birth weight infant, on malnutrition, and on social environmental factors; and barriers that are present to hinder prevention of mental retardation. It is concluded that "we can indeed significantly reduce the incidence and prevalence of mental retardation," but the question the author asks is, "Shall we?"

29. Beischer, Norman A.; Drew, John H.; Kenny, John M.; and O'Sullivan, Edward F.: "The Effect of Rest and Intravenous Infusion of Hypertonic Dextrose on Subnormal Estriol Excretion in Pregnancy," *Clinics in Perinatology*, 1:253-272, September, 1974.

A series of 184 consecutive obstetric patients with persistently low urinary estriol levels were studied regarding the effects of bed rest and the intravenous infusion of hypertonic dextrose. Both the favorable and unfavorable responses in these cases to these two methods of treatment are explained. "With rest in bed in the lateral position estriol excretion rose above the lower limit of normal in 50 patients and remained low in 134; of these, 63 were unsuitable for further conservative treatment and were delivered, and the remaining 71 received hypertonic dextrose infusions. Dextrose infusion resulted in normal estriol excretion in 38 of the 71 patients and appeared to improve fetal nutrition and well-being even when the fetus was malformed and retarded in growth. This method of conservative treatment of patients with persistently low estriol excretion is recommended when there is no maternal indication such as severe pre-eclampsia, for termination of pregnancy."

30. Benesh, R., and McGuinness, Julia: "Benesh Movement Notation and Medicine," *Physiotherapy*, 60:176-178, June, 1974.

The Benesh Movement Notation is briefly explained, and its function in the field of medicine is considered. A research project and its findings are described in which Professor Milani of Florence in 1968 studied "the feasibility of Benesh Movement Notation as a suitable recording tool in the medical field." Approximately 5000 patterns of posture and movement were recorded for 100 normal babies, 17 normal adults, and 93 children with cerebral palsy. Uses of this method in medicine today are discussed. "Benesh Movement Notation is an objective recording tool, neutral towards any theories of movement, economic, accurate and comprehensive. It serves two functions in the medical field: 1. As a recording tool suitable in any situation where clear, accurate and detailed reports are required of patients' motor skills. 2. As a research tool, where it is necessary to cull vast information on motor patterns for comparative analysis."

31. Bengtsson, B., and Verneholt, J.: "A Follow-Up Study of Hyperbilirubinaemia in Healthy, Full-Term Infants Without Iso-Immunization," *Acta Paediatrica Scandinavica*, 63:70-80, January, 1974.

A follow-up study, consisting of obtaining a full medical history and physical, neurological, hearing, and psychological exams, was conducted on 111 children, who had been full-term, healthy newborns but had had neonatal hyperbilirubinemia without iso-immunization and maximal bilirubin values of 20 to 51 mg/100 ml, and 115 control children who had had no noted neonatal jaundice. At the time of this follow-up investigation the age range of the children was from 6 1/2 to 13 years. The children, the examinations, and the methods of statistical analysis are described. Of the 111 children who had had neonatal hyperbilirubinemia, two had "athetotic incoordination" and four had "sensorineural hearing impairment." Of the 15 control children, no such disorders were found. These differences between the two groups were not statistically significant. Six case reports are presented, the findings are discussed, and conclusions are rendered. "Exchange transfusion is recommended in healthy, full-term infants without iso-immunization as a measure to prevent the serum bilirubin level from exceeding 25 mg/100 ml."

32. Bergsma, Daniel, ed.: *Birth Defects: Atlas and Compendium.* Baltimore: Williams and Wilkins, 1973. 1006 pp.

This large volume prepared by the National Foundation of the March of Dimes, contains an atlas of 641 photographs and a compendium of 842 birth defects, in which information is presented on each defect using a standardized format. Factors presented under each entry include clinical findings, minimal diagnostic criteria, complications, etiology, pathogenesis, related facts, treatment, prognosis, detection of carrier, special considerations, and additional references to consult. The name or names of contributors supplying the information follows each entry. Following the compendium is a section of tables, a listing of figure credits, an author index, and a subject index.

33. Bergsma, Daniel, ed.: *The Infant at Risk.* New York: Intercontinental Medical Book Corp., 1974. 181 pp. (Birth Defects: Original Article Series, Volume X, Number 2.)

This volume is the result of a symposium on "The Infant at Risk: Early Detection and Preventive Intervention" that was sponsored by The National Foundation of the March of Dimes. In the opening article, "the effects on one young child of his environment and his unique individual responses to it" are described. The next three deal with risks to the infant during pregnancy and the perinatal period. These are followed by three articles concerned with early emotional and psychological development. Three articles are then presented on "problems in the first three years of life and preventive intervention." The final three papers are concerned with "cross-cultural considerations." A summary of the proceedings of the symposium and a subject index are included.

34. Berlin, Irving: "Minimal Brain Dysfunction," *Journal of the American Medical Association*, 229:1454-1456, September 9, 1974.

Aspects considered in this article include the need for early identification and treatment, the distress caused the mother and family, parental blame, early training problems, and the physician's role.

35. Berns, Jacqueline: "The Uses of Accountability," *Training School Bulletin*, 69: 127-130, November, 1972.

Explained and discussed is a Voucher System to be used for the care and education of atypical children. It is "a system that would allow parents to use public money to purchase care for their children at the facility of their choice. Under this system the parents of mentally or physically handicapped children in a community would be given a Voucher roughly representing their child's share of public monies presently budgeted for the care, training and education of the handicapped child. The parent would turn in the Voucher at the day care center, public school, residential facility or private school that best suited the child's needs; the facility would then turn the Voucher in to a government agency to collect its money." It is felt that such a system would encourage schools to offer alternative, quality programs to attract parents. Also, parental involvement would be increased because parents would have more options and more control over the care and training their child would receive. It is suggested that such a system be administered by a "State Department of Developmental Disabilities." Also considered in relation to this proposed program are the importance of agency responsiveness to the needs of special children and possible problems involved in this system.

36. Bernuth, H. von, and Janssen, G.: "Behavioural Changes in Fototherapy," *Neuropädiatrie*, 5:369-375, November, 1974.

Polygraphically studied in daylight and under standardized blue light conditions were the heart rate, respiratory rate, electroencephalogram, electrooculogram, and electromyogram of 18 healthy newborns having no neurological abnormalities and no hyperbilirubinemia. Methods of analyzing the polygraphic records are explained. Differences seen in these records between periods with and without

the blue light are listed. "Under blue light there was an increase in respiratory rate with a slight increase of physiologic apneas, an increase in heart rate which was not significant, a slight decrease in the number of spontaneous startles, a significant, higher number of rapid eye movements, a relative increase of active sleep states with an unchanged total length of sleep cycles, and a more immature EEG pattern. All these effects of fototherapy are reversible within a short time."

37. Berry, H.K.; Butcher, R.E.; Elliot, L.A.; and Brunner, R.L.: "The Effect of Monosodium Glutamate on the Early Biochemical and Behavioral Development of the Rat," *Developmental Psychobiology*, 7:165-173, March, 1974.

Two experiments were conducted on rats who had been given monosodium glutamate (MSG) as described during the first ten days of life. In Experiment I some of these treated rats were tested in a summary maze at age 50 days. "They appeared less able to learn the maze than littermate controls that had received only saline." In Experiment II other treated rats were sacrificed on Day 10 after the final injection and the biochemical effects of the MSG were investigated. Findings indicated "increased levels of aspartic and glutamic acids, taurine, urea, and glutathione in the brain, liver, and blood of the MSG animals as compared to their controls. Tyrosine and histidine levels were consistently lower. These abnormalities of amino acid metabolism appear to be of sufficient magnitude to alter the structural development of the CNS. The behavioral changes observed suggest an enduring impairment of function."

38. Bhagwanani, S.G.; Fahmy, D.; and Turnbull, A.C.: "Prediction of Neonatal Respiratory Distress by Estimation of Amniotic-Fluid Lecithin," *Lancet*, 1:159-162, January 22, 1972.

A chemical method is described that was used to estimate the lecithin concentration in 171 samples of amniotic fluid from 156 patients at various stages of gestation. The lecithin levels continued to rise as the pregnancies advanced with there being no detectable differences between the mean levels in the cases of rhesus isoimmunization, pre-eclampsia, and placental insufficiency and the levels in the normal cases. Some 110 samples were obtained 24 hours or less before delivery. In the 97 cases where respiration was normal, the lecithin levels had been 3.5 mg or more per 100 ml before delivery. Of the 13 cases where respiratory distress developed following birth, 12 of these cases had pre-delivery lecithin levels ranging between 0.6 and 3.4 mg per 100 ml. Other findings are presented. "The lecithin concentration in the amniotic fluid seems to be a sensitive index of fetal lung maturity and of the potential risk of respiratory distress developing in the baby."

39. Bidder, R.T.; Crowe, E.A.; and Gray, O.P.: "Mothers' Attitudes to Preterm Infants," *Archives of Disease in Childhood*, 49:766-770, October, 1974.

The altered mother/infant relationship caused by premature birth is discussed, and pertinent studies are reviewed. The attitudes of mothers toward their preterm and term children were studied and compared in 20 mothers having one child born prematurely and one child born at term. These mothers were interviewed at home and given the Semantic-Differential to complete as described. "It was

postulated that mothers would show more concern for their preterm infant than their term infant, but this hypothesis was not supported by the results. The attitudes of mothers were analysed and the only statistical significance was in the concept 'strong-weak,' which indicated that mothers see their preterm child as being weaker than their term child. The interview material revealed interesting additional findings that there were two specific periods of concern, and also elaborated the 'strong-weak' concept."

40. Blattner, Russell J.: "The Role of Viruses in Congenital Defects," *American Journal of Diseases of Children*, 128:781-786, December, 1974.

Studies and their results, conducted by the author and his associates, concerning the defects produced by viruses are described. Rubella, cytomegalovirus, herpesvirus hominis, and varicella-zoster virus are then discussed individually in relation to their role in congenital defects. The influences and mechanisms in the production of these defects are explained as are methods of prevention.

41. Blattner, Russell J.; Williamson, Alice P.; and Heys, Florence M.: "Role of Viruses in the Etiology of Congenital Malformations," in *Progress in Medical Virology, Volume 15* edited by Joseph L. Melnick. New York: S. Karger, 1973. pp. 1-41.

This subject is introduced, the general literature is reviewed, and a table is presented that outlines the "microorganisms associated with congenital defects or intrauterine infection in humans." Rubella virus, cytomegalovirus, and herpesvirus hominis are then individually discussed regarding their roles in the etiology of congenital malformations. Also considered are other viruses suspected of causing congenital defects and the characteristics of the infections causing the congenital defects. In the final section of the article, animal viruses causing congenital defects are described, and experimental studies conducted on animal models are reviewed. A bibliography of eight pages follows the article.

42. Blennow, G., and Svenningsen, N.W.: "Cerebrospinal Fluid Lactate/Pyruvate Ratio in Children with Febrile Convulsions," *Neuropädiatrie*, 5:157-161, May, 1974.

The lactate and pyruvate concentrations and the lactate/pyruvate ratio were determined in the cerebral spinal fluid (CSF) of 20 infants and children between 10 minutes and 9.5 hours after they had had a sustained febrile convulsion (FC). A neurological examination was conducted on all the children and "did not reveal anything abnormal and the psychomotor development was considered normal in all infants and children." EEGs were conducted within ten days after the FC, and tracings of two of the children were abnormal. "No biochemical signs of cerebral hypoxia could be found after shortlasting FC. The findings indicate that hypoxic brain damage as a consequence of shortlasting FC is very unlikely." "On the other hand during longlasting seizures, febrile or not - in children with or without preceeding epilepsy - convulsive hypoxic brain damage will most likely occur. Preliminary studies in our department with measurement of CSF lactate/pyruvate ratio after longlasting severe convulsions have shown changes indicative of brain tissue hypoxia. These findings will be published separately."

43. Boehm, Frank H.; DiPietro, David L.; and Goss, Donald A.: "The Effect of Ampicillin Administration on Urinary Estriol and Serum Estradiol in the Normal Pregnant Patient," *American Journal of Obstetrics and Gynecology*, 119:98-103, May 1, 1974.

For seven consecutive days the urinary estriol level was determined in 18 normal pregnant patients and for five consecutive days the serum unconjugated estradiol level was determined in six normal pregnant patients. On days 3-5 of the study ampicillin was administered to these patients as described. Concerning the results of the study, the authors stated, "We find that (1) despite the fact that our series is small the administration of ampicillin does not seem to lower the concentration of serum unconjugated estradiol; (2) in a few normal patients, six out of 18, this drug does decrease the urinary estriol by greater than 35 per cent, which would contraindicate the use of this drug in the high-risk obstetrical patient being followed with estriols; (3) this effect, however, does not seem to be consistent or as marked as had earlier been reported." A discussion is conducted by Drs. John L. Duhring, A. Brian Little, and Boehm.

44. Boenisch, Herbert, and Saling, Erich: "A Combined Clinical-Biochemical Scoring of the Newborn: Results of the Past Four Years," *Journal of Perinatal Medicine*, 2: 122-129, 1974.

A combined clinical-biochemical score is given to each infant born in the clinic of the authors. Data on this score accumulated over a four-year period is analyzed in this article to investigate "whether the increasingly better diagnostic and therapeutic advances of the past few years led to a decrease in morbidity - i.e. fewer cases of acidosis and clinical depression." This scoring system is described and data are presented. Included in the scoring, in addition to the clinical score, is the measurement of the pH value in the umbilical artery blood. Findings revealed "an almost continuous decrease in cases of neonatal acidosis... and clinical depression" over the study period, while "the number of vigorous infants...rose correspondingly and significantly in the same period." Other results are reported. "Because of its dependability for assessing neonatal condition and its objectivity, the acidity score should be included in every evaluation of the newborn infant."

45. Booth, Mollie, and El Garf, T.A.R.: "Plasma Progesterone Concentration During the Third Trimester of Diabetic Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:768-776, October, 1974.

During the final trimester of pregnancy, plasma samples were obtained from a group of "normal" obstetric patients and a group of diabetic patients. Progesterone concentrations were determined in the samples by gas liquid chromatography with laboratory methods described. These concentrations in the two groups of patients were compared at ten day intervals. "Plasma progesterone concentrations increased curvilinearly in 61 normal women and linearly in 39 diabetic patients between days 194 and 283 of gestation. Between days 215 and 225 of pregnancy, progesterone concentrations in diabetic women rose significantly above normal, and subsequent similar rates of increase in the two groups maintained this difference until parturition. It is still not possible to define unequivocally normal and abnormal ranges." "The results of this investigation indicate that plasma progesterone although higher than normal in diabetic pregnancy, has at

present no practical application for diagnosis of fetal complications. However, although the significance of its influence on diabetes is uncertain, it now seems possible that serial estimates of plasma progesterone could predict the probable end of gestation and thereby fix an induction time to allow maximal fetal maturity while still avoiding fetal macrosomia."

46. Boots, Larry; Younger, J.B.; Mullis, J.W.; and Beck, L.R.: "Endocrinology of the Maternal-Fetoplacental Unit. I. Use of Serum Estrogens as a Practical Index of Fetal Well-Being," *American Journal of Obstetrics and Gynecology*, 120:515-523, October 15, 1974.

An indigent population was used to evaluate a serum estrogen (SE) assay in order to determine "its practicality as well as accuracy, percision, and other statistical parameters." Seventy indigent, high-risk obstetric patients were retrospectively selected on the basis of their delivery of a normal baby. Serial urinary and serum samples were obtained from 28 to 32 weeks of pregnancy until delivery, and 24-hour total urinary estrogen (UE), the estrogen/creatinine ratio (E/C), and serum estrogen values were determined. "Correlation coefficients for 218 paired samples were highly significant ($p < 0.01$) between SE and UE ($r = 0.31$), SE and E/C ($r = 0.28$), and UE and E/C ($r = 0.72$)." The over-all means and standard deviations for UE, E/C, and SE were determined and are presented. Four compromised cases are presented to illustrate that urine and serum estrogen values usually correlate well not only in healthy pregnancies, but also in pregnancies with complications. "Since only one case of overscreening existed in 70 patients, it can be concluded that SE is a most useful clinical aid in screening the high-risk obstetric population for indications of possible fetal compromise. This assay system has the necessary practicability to be useful under the conditions presented by an indigent population seen predominantly as outpatients."

47. Boréus, Lars O., ed.: *Fetal Pharmacology*. New York: Raven Press, 1973. 487 pp.

This volume is based on a conference held in Stockholm in 1971 and sponsored by the Foundation for Child Development in New York and the Karolinska Institutet in Stockholm. "This volume represents an attempt to reverse the tendency toward over-emphasis of the negative aspects of drug therapy in pregnancy. Here the fetus is looked upon as a potential patient. Basic pharmacological principles have been applied, and opportunities as well as risks considered. The approach has been stimulated by recent advances in clinical pharmacology in general, and in the technology of fetal monitoring, chemical microanalyses of drugs, and improved prenatal diagnostic methods in particular." Contributors have presented papers in five general areas: drug distribution, drugs and autonomic function, drug metabolism, development of developmental pharmacology, and drugs and the blastocyst. There are many bibliographies and an index.

48. Boyd, I.E.; Chamberlain, G.V.P.; and Fergusson, I.L.C.: "The Oxytocin Stress Tes and the Isoxsuprine Placental Transfer Test in the Management of Suspected Placental Insufficiency," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:120-125, February, 1974.

An oxytocin stress test was administered as described to 41 patients who were suspected of having placental insufficiency. Serial urinary estrogen determinations and ultrasonic fetal biparietal diameter measurements had been performed.

The tests were graded either "positive when the contractions elicited a late deceleration," borderline, or negative. Five patients had positive test results one of whom had a baby that died in the neonatal period of multiple congenital anomalies and one delivered a depressed baby. The other three patients delivere vigorous babies. Two other infants died after negative test findings. These tw cases are briefly presented. In 22 patients an isoxsuprine placental transfer test was performed as described, "but the results did not correlate with the oxy tocin stress test, birthweight for gestational age, or Apgar score of the infant." Findings are discussed.

49. Brackbill, Y.; Kane, J.; Manniello, R.L.; and Abramson, D.: "Obstetric Premedication and Infant Outcome," *American Journal of Obstetrics and Gynecology*, 118: 377-384, February 1, 1974.

Studied were a main sample of 25 infants, 14 of whose mothers did receive meperidine as obstetric premedication and 11 of whose mothers did not receive meperidine, and a supplementary sample of 19 infants whose mothers had received various obstetric premedications. The infants in the main sample were tested on three dependent variables: the habituation rate of the orientation reflex, the Neonatal Behavioral Assessment Scale, and the Apgar score. The supplementary infants were tested on the habituation rate and the Apgar score. The three dependent variables are described, and findings regarding each are presented. "The results for both groups indicate not only that obstetric premedication affects neonatal functioning but also that it affects these functions differentially. Premedication dosage was closely related not only to differences in infants' ability to respond but, more importantly, to inhibit responding. Questions concerning the mediation of the effects, their duration, and their consequences for the developing organism are discussed."

50. Brenner, W.E.; Bruce, R.D.; and Hendricks, C.H.: "The Characteristics and Perils of Breech Presentation," *American Journal of Obstetrics and Gynecology*, 118:700-712, March 1, 1974.

Compared and analyzed as to differences were 1,016 breech and 29,343 non-breech singleton deliveries which took place at one institution. Findings are presented regarding prematurity rates, fetal and placental weights, congenital abnormalities, associated maternal diseases, perinatal mortality rates, complications, method of delivery, anesthesia, and induction and augmentation of labor in the breech deliveries. "Although many of the differences between breech and non-breeches were explained by the increased frequency of prematurity among breeches, certain specific differences remained after correction for gestational age: (1) lower fetal and placental weights, (2) higher rates of congenital abnormalities, (3) higher perinatal mortality rates, (4) lower Apgar scores, and (5) higher rates of complications in labor." Comment is made on these and other findings, and a discussion is conducted involving five other doctors and Dr. Brenner.

51. Brock, D.J.H.; Bolton, A.E.; and Scrimgeour, J.B.: "Prenatal Diagnosis of Spina Bifida and Anencephaly Through Maternal Plasma-Alpha-Fetoprotein Measurement," *Lancet*, 1:767-769, April 27, 1974.

Maternal serum was obtained and stored from women attending prenatal clinics in Edinburgh. Alpha-fetoprotein (A.F.P.) levels were determined as described. Thirteen of these pregnancies resulted in infants with central nervous system malformations. "In eight out of eight cases of anencephaly and three out of five cases

of spina bifida values were well above the upper limit of the normal range for that gestation. All six plasma samples taken between 15 and 18 weeks of pregnancy had distinctively abnormal A.F.P. concentrations." Brief case reports are presented of the five spina bifida cases. Findings are discussed, and "it is argued that even at a level of successful detection well below 100%, this form of prenatal diagnosis may be worth while for spina bifida."

52. Browder, J.A.; and Levy, W.J.: "Vision Testing of Young and Retarded Children," *Clinical Pediatrics*, 13:983-986, November, 1974.

The Stycar test was employed as a vision screening device in 52 consecutive children, ages 6 months to 18 years, who were referred for developmental delay. "Six of the 52 children below age two were not considered satisfactory for any formal testing." Methods of administering the test are described. The testing was considered to be satisfactory in 35 of the 46 tested children. "Observations in a small population suggest that the Stycar system for vision testing is especially applicable to the evaluating of retarded and other handicapped children functioning at a young age level. Our experience suggests most children with mental ages above three years can be tested with this approach, despite their limitations of short attention span, distractibility, visual perceptual immaturity, and behavior problems. When adjustment is made for the children's mental ages, these difficulties seem minimized and success is probably equivalent to that of other studies of preschool children."

53. Browder, J. Albert, and Mershon, Patricia M.: "Speech and Language Development: The Physician's Role," *Postgraduate Medicine*, 56:151-157, August, 1974.

Current information is provided for the physician giving counsel to parents on the speech and language development of their children. Aspects considered include normal speech and language development in children; the causes of speech and language delay, including hearing loss; and guidelines for the stimulation of speech and language development in both normal children and those with delayed speech and language.

54. Brown, J.K.: "Convulsions in the Newborn Period," *Developmental Medicine and Child Neurology*, 15:823-846, December, 1973.

Initially in this "revision article," the definition of convulsions is considered and the clinical seizure is described including the differentiation between two types of convulsions, clonic and tonic. Then explained are the pathophysiology, etiology, and general characteristics of convulsions. The clinical pattern and management of convulsions are then discussed in relation to specific causes. The causes of convulsions which are individually considered are asphyxial brain damage, birth injury, intracranial hemorrhage, infections, genetic disorders, congenital malformation, some eight metabolic diseases, exogenous toxic encephalopathy, and drug withdrawal.

55. Brown, J.K.; Purvis, R.J.; Forfar, J.O.; and Cockburn, F.: "Neurological Aspects of Perinatal Asphyxia," *Developmental Medicine and Child Neurology*, 16:567-580, October, 1974.

Selected for study from a group of 760 live-born asphyxiated (as defined) infants, were 94 infants who also displayed abnormal behavioral symptoms which were prognostic for long-term neurological and intellectual handicap. These seven additional behavioral symptoms were feeding difficulty, apneic or cyanotic attacks, apathy, convulsions, hypothermia, high-pitched cerebral cry, and persistent vomiting. The 94 infants were given complete neurological exams, and 93 of them were followed to a mean age of 21 months. Findings are reported concerning the asphyxia, obstetric problems, behavior patterns, birth weight and gestation, sex, neurological findings, and muscle tone. "The 94 infants were further categorised on the basis of the state of muscle tone, which was found to be one of hypotonia, extensor, hypertonus, or normal flexor tone, or in transition from hypotonia to extensor hypertonus. Other neurological findings were correlated with muscle tone." The infants were divided into five categories for outcome: (1) dead [20], (2) severely handicapped [11], (3) definite neurological abnormality [13], (4) minimal cerebral dysfunction [15], and (5) completely normal [34]. The abnormal cases are further described. "The severity of the handicap was related to the earlier categorisation according to the muscle tone. It was found that infants with hypotonia or with hypotonia progressing to extensor hypertonus had a very bad prognosis, while infants with normal flexor tone had a very good prognosis. It is suggested that abnormal behavior after an asphyxial birth can be used in the neonatal period to detect potentially brain-damaged infants, and that an assessment of muscle tone and a neurological examination can extend and refine this ability to make an accurate prognosis of long-term mental and neurological handicaps."

56. Brown, James B.: "The Value of Plasma Estrogen Estimations in the Management of Pregnancy," *Clinics in Perinatology*, 1:273-291, September, 1974.

The following aspects are reviewed in this article: "(1) theoretical considerations relating estrogen values to fetoplacental function; (2) background provided by urinary estrogen assay in the management of pregnancy; (3) methods for measuring estrogens in blood; (4) normal plasma estrogen values during the second half of pregnancy; (5) hourly and daily variations in plasma estrogen values; (6) effects of pregnancy complications on plasma estrogen values; (7) comparison between plasma and urinary estrogen measurements in determining fetal risk; (8) value of blood estrogen assays during labor; and (9) conclusions."

57. Bryant, Gillian M., and Davies, Kathleen J.: "The Effect of Sex, Social Class and Parity on Achievement of Denver Developmental Screening Test Items in the First Year of Life," *Developmental Medicine and Child Neurology*, 16:485-493, August, 1974.

When 668 infants, ages 2 weeks to 12 months, formed a study population for the standardization of the DDST in Cardiff, Wales, the factors of sex, social class, and parity were not seen to have significant effects on the results. Charts are presented. Implications are considered.

58. Bryant, Gillian M.; Davies, Kathleen J.; and Newcombe, Robert G.: "The Denver Developmental Screening Test. Achievement of Test Items in the First Year of Life by Denver and Cardiff Infants," *Developmental Medicine and Child Neurology*, 16:475-484, August, 1974.

A total of 668 infants, ages 2 weeks to 12 months, formed a study population for the standardization of the DDST in Cardiff, Wales. These children are described as to social class, parity, birth weight, gestation, and age grouping. Analysis of data is explained. Results are presented with regard to differences found between the Cardiff and Denver infants with charts included. "Differences were found between the ages at which the Cardiff and Denver populations achieved the items." The Cardiff infants were "in general slightly more advanced on language and personal-social items and slower on motor items." Implications are considered.

59. Bryson, Melvin J.; Gabert, Harvey A.; and Stenchever, Morton A.: "Amniotic Fluid Lecithin/Sphingomyelin Ratio as an Assessment of Fetal Pulmonary Maturity," *American Journal of Obstetrics and Gynecology*, 114:208-212, September 15, 1972.

Experience of the authors with using the L/S ratio to predict fetal lung maturity is reported. The L/S was determined as described in 185 amniotic fluid samples from 167 high risk pregnancies. When results indicated a L/S ratio of 1.5 or less (immature fetal lung), all spontaneously delivered infants developed RDS or hyaline membrane disease. When the L/S ratio was between 1.51 and 1.80 (transitional fetal lung), some of the infants developed RDS. When the ratio was 1.80 or more, RDS did not develop (mature lung). Specific data are presented on results of using the L/S ratio in the management of diabetic pregnancies, Rh-sensitized pregnancies, and in pregnancies with miscellaneous complications. "The L/S ratio in amniotic fluid is a rapid, accurate method to assess fetal lung maturity and is an invaluable aid in the management of increased risk pregnancies and in cases of repeat cesarean section where the gestational age is unknown."

60. Buck, Melody Didra: "Wheelchair Modifications to Aid Walking and Upper Extremity Function," *Physical Therapy*, 54:377-378, April, 1974.

Pictured and described are modifications to a wheelchair to aid the patient in independently performing activities of daily living.

61. Bunch, Wilton H.; Cass, Alexander S.; Bensman, Alan S.; and Long, Donlin M. *Modern Management of Myelomeningocele*. St. Louis, Missouri: Warren H. Green, 1972, 251 pp.

In this book is described the team approach advocated by the authors in the management and treatment of myelomeningocele. Within the eight chapters the disease is explained; neurosurgical, urological, orthopedic, emotional, intellectual, and habilitation aspects are considered; and the team concept employed in "the comprehensive care clinic" is discussed. Photographs and reference lists are frequent. There is an index.

62. Burke, David C.: "Traumatic Spinal Paralysis in Children," *Paraplegia*, 11:268-276, February, 1974.

Reviewed were the cases of 29 children treated for traumatic paraplegia at Rancho Los Amigos Hospital in Downey, California. All patients had received their injury before age 13 years, and five of the patients had severe paralysis from birth injuries. Aspects of these cases considered include operative findings, mortality, autopsy findings, survival, and complications.

63. Butler, N.R.; Goldstein, H.; and Ross, E.M.: "Cigarette Smoking in Pregnancy: Its Influence on Birth Weight and Perinatal Mortality," *British Medical Journal*, 2:127-130, April 15, 1972.

Using the population from the British Perinatal Mortality Survey, mothers were placed in groups depending upon the average number of cigarettes smoked daily both previous to and during pregnancy. Results indicated a 28% increase in the "late fetal plus neonatal mortality rate" in those women who smoked cigaretts during pregnancy. The mean birth weight was 3,386 g in those women who smoked no cigarettes and 3,175 g in those who smoked 20-30 cigarettes daily after the fourth month of pregnancy. "And these differences persist even after allowing for a number of 'mediating' maternal and social variables. A change in smoking habit by the end of the fourth month of pregnancy places a mother in the risk category appropriate to her changed habit." Results from other studies are discussed, as are the implications of this study.

64. Butterworth, J.; Broadhead, D.M.; Sutherland, G.R.; and Bain, A.D.: "Lysosomal Enzymes of Amniotic Fluid in Relation to Gestational Age," *American Journal of Obstetrics and Gynecology*, 119:821-828, July 15, 1974.

Presented is a study in which over 100 amniotic fluid samples were obtained at various gestational stages, and the activities of ten lysosomal enzymes were studied. Findings are reported and related to the value of these enzymes for following fetal growth and development.

65. Buyse, F.G.C.; Wormgoor, B.H.; Bernard, J. Th.; and Koudstaal, J: "Anticoagulant Therapy of Patients with Repeated Placental Infarction," *Obstetrics and Gynecology*, 43:844-848, June, 1974.

Three case reports are presented of patients "who suffered from repeated extensive placental infarction leading to intrauterine death or severe dysmaturity." In subsequent pregnancy these patients received anticoagulants as described, and all delivered healthy infants. The theoretical basis of such treatment is discussed.

66. Cahill, J.; Cohen, H.; and Starkovsky, N.: "A Rapid Screening Test for Detection of Alpha-1 Fetoprotein as an Indicator of Fetal Distress," *American Journal of Obstetrics and Gynecology*, 119:1095-1100, August 15, 1974.

Described is a rapid, simple latex slide test to be used in the detection of a_1-fetoprotein (AFP) and the results of its usage. "The data presented in this report suggests a relationship between increased AFP values in maternal sera and fetal damage and supports other published observations. The relative simplicity of the afp-slide test should encourage laboratories with available clinical material to extend these studies."

67. Calder, A.A.; Moar, V.A.; Ounsted, M.K.; and Turnbull, A.C.: "Increased Bilirubin Levels in Neonates After Induction of Labour by Intravenous Prostaglandin E_2 or Oxytocin," *Lancet*, 2:1339-1342, December 7, 1974.

Prospectively studied were four groups of primigravid women, with each group containing 30 patients. In Group A labor was induced by intravenous oxytocin, in Group B by intravenous prostaglandin E_2, in Group C by extra-amniotic prostaglandin E_2, and in Group D labor was spontaneous. Information was also obtained from these women relative to oral contraceptive use, cigarette smoking, and infant feeding methods. Serum bilirubin levels were determined in the infants of these patients on day five of life. These mean levels were found to be significantly higher in Groups A and B than in Group D and were not affected by the other factors considered. Other findings are reported and discussed. "The results of this study suggest that the hyperbilirubinemia associated with oxytocin infusion may be due to the artificial interruption of pregnancy rather than to any direct effect of oxytocin."

68. Campbell, Stuart: "The Assessment of Fetal Development by Diagnostic Ultrasound," *Clinics in Perinatology*, 1:507-525, September, 1974.

Ultrasonic imaging techniques are described, and their use for the estimation of fetal maturity, growth and size are discussed. Also considered are new ultrasonic techniques that may be used to assess fetal urinary production rates and respiratory movements.

69. Campbell, Suzann K.: "Facilitation of Cognitive and Motor Development in Infants with Central Nervous System Dysfunction," *Physical Therapy*, 54:346-353, April, 1974.

Presented is an infant stimulation program developed at the University of North Carolina, which is based on the concepts of Piaget in combination with neurodevelopmental treatment methods. The developmental psychology of Piaget and the sensorimotor stages he describes are reviewed. The described program is used in a Special Infant Care Clinic with high-risk infants. Simple instructions on home management activities are given to the parents of these infants. These activities are explained and are in the areas of sucking, vision, hearing, grasping, and coordination of the previous four schemata. "We hope these suggestions may circumvent the problems of sensory deprivation and secondary mental retardation often seen in high risk infants with significant motor problems."

70. Carswell, W., and Semple, P.F.: "The Effect of Frusemide on Uric Acid Levels in Maternal Blood, Fetal Blood and Amniotic Fluid," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:472-474, June, 1974.

Studied were 52 obstetric patients of whom 17 had pre-eclampsia as defined. The other 35 patients were considered controls. Uric acid levels were measured concurrently in maternal serum, fetal serum, and amniotic fluid. Eight of the pre-eclamptic women and nine of the control women had been taking frusemide as described for from 5 to 45 days. "The patients with pre-eclampsia who were not on frusemide had higher uric acid levels in all fluids studied than did the untreated controls and frusemide increased the uric acid levels further in both types of patient." "The elevation of fetal serum uric acid which we have observed in patients on fursemide is a further indication for avoiding diuretic therapy in pregnancy. The use of amniotic fluid uric acid as an index of fetal maturity...is likely to be rendered invalid in pre-eclamptic patients and in those receiving diuretic therapy."

71. Cassady, George: "Amniocentesis," *Clinics in Perinatology*, 1:87-124, March, 1974.

Reviewed in this article are current data on the composition of amniotic fluid "with particular emphasis on compositional changes reported to accompany feto-maternal compromise." Individually considered are protein, amino acids, nonprotein nitrogen, lipids, electrolytes, sugar, the acid-base and Po_2, bilirubin, and volume of amniotic fluid. A list of 298 references follows the article.

72. Castells, Salvador; Voeller, Kytja K.; Vings, Carlos, and Lu, Chun: "Cerebral Dwarfism: Association of Brain Dysfunction with Growth Retardation," *Journal of Pediatrics*, 85:36-42, July, 1974.

Reported is a study of ten children of whom all were growth and mentally retarded, with eight of the ten also displaying motor involvement of varying severity. Additional findings in these cases are presented relevant to laboratory determinations, family history, patient perinatal and postnatal history, anthropometric data, mental ability, neurologic and neuroradiologic findings and endocrine findings. "It was concluded that there was an abnormality in hypothalamic function, associated with prenatal or perinatal cerebral anoxia, resulting in a deficiency of some of the hypothalamic-releasing factors."

73. Chan, Tanny, and Klopper, Arnold: "The Variability of Plasma Oestradiol Concentration in Late Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:357-360, May, 1974.

The measurement of plasma hormones to assess fetoplacental function is discussed. Plasma was obtained on five consecutive days from five women at 37 to 39 weeks of normal pregnancy, and plasma estradiol concentrations were determined. The variability of the conjugated and unconjugated estradiol was then examined and also determined was "what proportions of the total oestradiol in plasma each of these fractions may form." "The overall coefficient of variation was 7.9 per cent for conjugated oestradiol, 7.2 per cent for the unconjugated steroid and 7.4 per cent for the total oestradiol. Single measurements were made in a further 30 women. Generally the conjugated and unconjugated steroid were present in equal amounts." Findings are discussed.

74. Chard, T.: "The Fetus At Risk, " *Lancet*, 2:880-883, October 12, 1974.

Considered are fetal screening, the procedures available for the detection of the fetus at risk and their hazards, the treatment of the fetus and its hazards, the value of screening procedures, and the problems involved in the application of screening procedures.

75. Christie, G.B., and Cudmore, D.W.: "The Oxytocin Challenge Test," *American Journal of Obstetrics and Gynecology*, 118:327-330, February 1, 1974.

In order to determine the validity of the oxytocin challenge test as a means of assessing fetal well-being and the ability of the fetus to tolerate labor, this test was performed on 50 high-risk obstetric patients. Results were "then correlated with: (1) estriol determinations, (2) the occurrence of fetal distress in labor, (3) Apgar score, (4) high-risk index, and (5) gestational age at the time the test was performed." No correlation was found between a positive test (9 cases) and "low estriol levels, the occurrence of fetal distress in labor, or Apgar scores. However, the results suggest a negative test in a high-risk pregnancy may be a guide to allow the pregnancy to continue." Results are discussed and contrasted to those from other related studies.

76. Churchill, John A.; Masland, Richard L.; Naylor, Alfred A.; and Ashworth, Margaret R.: "The Etiology of Cerebral Palsy in Pre-term Infants," *Developmental Medicine and Child Neurology*, 16:143-149, April, 1974.

Evidence is presented which was obtained by the Collaborative Study on Cerebral Palsy. A total of 49,430 babies were in the study population of whom 856 weighed less than 2.0 kg at birth. Of these 856, 44 had spastic diplegia at age one year, on the basis of presented criteria. Some 199 of the 856 low-birth weight infants were small-for-dates, having gestations of 36 weeks or more, and none of these 199 babies were spastic. "This suggests that short gestation rather than low birthweight is a determinant of spastic diplegic cerebral palsy." The 44 pre-term spastic diplegic infants were matched as described with non-spastic, pre-term controls. Statistical comparisons were then made on genetic factors, birth trauma factors, asphyxia, infection factors, bilirubin data, prenatal factors, and the hematocrit of the infants. "Of the 44 affected infants, seven had been delivered before term by caesarean section, compared with two in the control group. Of the many variables studied, the only statistically significant finding was low hematocrit in babies with spastic diplegia, which supports the theory that spastic diplegia may be associated with intracranial hemorrhage."

77. Ciba Foundation: *Size at Birth.* Amsterdam: Associated Scientific Publishers, 1974. 408 pp. (Ciba Foundation Symposium No. 29 [new series].)

Published in this volume are the proceedings of a Symposium on "Size at Birth" held at the Ciba Foundation, London in March of 1974. The concern of the Symposium was with disturbances in the fetal autonomy which lead to differences in birth size. Papers presented by participants are included as well as discussions on these papers and "general discussion" on related topics. Several papers describe experimental work with animals. Among others of interest are "The infant of inappropriate size" by V. Dubowitz, "Immediate and long-term consequences of being large or small at birth: a comparative approach" by Elsie M. Widdowson,

"Physical methods of assessing size at birth" by S. Campbell, "Fetal malnutrition and brain development" by F.J. Schulte, and "Total parenteral nutrition in infant: of very low birth weight" by W.C. Heird, et. al. There are reference lists after the papers, an index of contributors, and a subject index.

78. Cibils, Luis A.: "The Placenta and Newborn Infant in Hypertensive Conditions," *American Journal of Obstetrics and Gynecology*, 118:256-270, January 15, 1974.

The placentas and the newborns from 57 hypertensive and 19 normal pregnancies were studied and compared as described. The hypertensive patients were divided into groups according to whether they had toxemia or pre-existing hypertension and also with regard to the intensity and duration of the hypertension. "The results indicate that the fetuses and placentas of hypertensive mothers were significantly lighter than normal. Furthermore, there was a significant gradient when comparing pure hypertensive, toxemic, and normal patients. The placental villi in hypertensive patients have an abnormally high number of terminal 'syncytial buds' which are proportional to the intensity and particularly to the duration of the hypertension. The neonatal weight curve of 'intrauterine growth-retarded' infants was markedly different from the average standard of true premature babies." Comment is made on the findings, and a discussion is conducted by Dr. Ralph M. Wynn. Many slides are pictured including one page of color slides.

79. Cleary, Robert E., and Young, Peter C.M.: "Serum Unconjugated Estriol in Normal and Abnormal Pregnancy," *American Journal of Obstetrics and Gynecology*, 118:18-24, January 1, 1974.

A radioimmunoassay was used to determine the levels of unconjugated estriol in the second half of 194 pregnancies. Methods are described. Serum unconjugated estriol values were seen to rise steadily as pregnancy progressed to term. Levels were found to be significantly below normal in pregnancies complicated by anencephaly and fetal death. The values in five diabetic patients remained normal with no perinatal deaths occurring. Levels determined in eight other abnormal pregnancies are also reported. It is felt "that determination of serum unconjugated E_3 is of value in certain high-risk cases."

80. Clements, John A.; Platzker, Arnold C.G.; Tierney, Donald F.; Hobel, Calvin J.; Creasy, Robert K.; Margolis, Alan J.; Thibeault, Donald W.; Tooley, William H.; and Oh, William: "Assessment of the Risk of the Respiratory-Distress Syndrome by a Rapid Test for Surfactant in Amniotic Fluid," *New England Journal of Medicine*, 286:1077-1081, May 18, 1972.

Described is "a rapid, simple inexpensive test" that was used to assess the risk of the respiratory-distress syndrome by determining if pulmonary surfactant was present in amniotic fluid. "The test depends on the ability of the pulmonary surfactant to generate stable foam in the presence of ethanol." Findings are presented on the analysis of 138 samples of amniotic fluid from patients, many of whom were at high risk for infants with respiratory-distress syndrome. From these 138 patients were delivered 93 live-born infants within 24 hours of the test. Of the 12 infants with clearly negative tests, all 12 developed severe respiratory-distress syndrome or transitory respiratory distress. Of the 68 infants with clearly positive tests, all 68 were free of respiratory distress. Of

the 13 infants with intermediate test results, 8 developed "mild to severe respiratory difficulty," It is concluded that "the test has high predictive value for respiratory-distress syndrome when applied to uncontaminated amniotic fluid. This method and its results are compared to determining the L/S ratio.

81. Colby, Jane A.: "Portable Child-Size Tilt Table," *Physical Therapy*, 54:26, January, 1974.

Such a tilt table is described and pictured.

82. Cotton, Ester: "Improvement in Motor Function with the Use of Conductive Education," *Developmental Medicine and Child Neurology*, 16:637-643, October, 1974.

The method of "conductive education" and its use in Ingfield Manor School in London with cerebral palsied children are described. Two case reports of cerebral palsied children, ages 11 and 9, are presented to illustrate this system of therapy and to discuss its success with such cases. It is hoped that younger children can soon be admitted to this school for such treatment.

83. Craft, Alan: "Children with Head Injuries," *Special Education: Future Trends*, 1:11-12, September, 1974.

The causes, effects, and rehabilitation of childhood head injuries are considered.

84. Cramblett, Henry G.; Haynes, Ralph E.; Azimi, Parvin H.; Hilty, Milo D.; and Wilder, Michael H.: "Nosocomial Infection with Echovirus Type II in Handicapped and Premature Infants," *Pediatrics*, 51:603-607, April, 1973.

An outbreak of echovirus type II infection occurred among premature and/or handicapped infants in an intensive care unit. "Four patients became ill within a short period of time and echovirus II was recovered from several of their specimens." These cases are reported as are the results of the virus studies and the epidemiology. It was not possible to determine how echovirus II entered the unit but the outbreak may have been due to inadequate hand washing. The ill infants were removed to an infectious disease unit, and the intensive care unit was closed to new admissions for seven days to halt the outbreak.

85. Cramer, Kathryn D., and Erber, Norman P.: "A Spondee Recognition Test for Young Hearing-Impaired Children," *Journal of Speech and Hearing Disorders*, 39:304-311, August, 1974.

Described is a simple spondee recognition test to be used with young severely and profoundly hearing-impaired children. The test set consists of ten familiar spondaic words recorded on Language Master cards, which are presented monaurally as described, and ten picture cards clearly depicting these words. Children are tested individually with the recorded stimulus words presented in random order to both ears with amplification described. The child is asked to repeat each word and point to the picture corresponding to the word. Findings are presented for 58 young hearing-impaired children who were tested on consecutive days until their performance stabilized.

Cronis, Samuel, and Gleeson, Ann W.: "Orthopedic Screening of School Children in Delaware," *Physical Therapy*, 54:1080-1083, October, 1974.

Over a ten-year period, 269,046 school children participated in an orthopedic screening program in Delaware. The five phases of the screening program are listed, and various aspects of the program are discussed including the preparation for screening, the screening process, examination details, follow-up procedures, and findings. The conditions discovered in 3,282 children are listed. "The overall value of the screening program is considered worthwhile, and the agencies concerned plan to continue their participation in this joint effort."

Crosigwani, Pier G.; Trojsi, Letizia; Attanasio, Antonio E.M.; and Finzi, G.C. Lombroso: "Value of HCG and HCS Measurement in Clinical Practice," *Obstetrics and Gynecology*, 44:673-681, November, 1974.

Blood samples were obtained from 378 healthy pregnant women and from described cases of abortion, molar pregnancy, Rh immunization, toxemia, postterm pregnancy, diabetes, twin pregnancy, and intrauterine death. Human chorionic gonadotropin (HCG) and human chorionic somatomammotropin (HCS) levels were then determined in these samples. Methods are described, and findings for each pregnancy complication are presented. "Although the tests proved helpful in some circumstances, the information obtained was not completely reliable. Their value at the present time appears to be greatest when they are made in conjunction with other tests."

Cruise, Mary O.: "A Longitudinal Study of the Growth of Low Birth Weight Infants. I. Velocity and Distance Growth, Birth to 3 Years," *Pediatrics*, 51:620-628, April, 1973.

This is Part I of a prespective longitudinal study "to accumulate data relating to (1) distance growth, (2) velocity growth, (3) skeletal maturation, and (4) development" of low birth weight infants of varying gestational ages. A total of "two hundred and two single birth, Caucasian, healthy, low birth weight infants and 113 full-term comparative infants, who weighed > 2,500 gm at birth" were studied from birth to age three years or more. The infants were divided into three groups according to gestational age. "Groups I and II are preterm infants but have normal measurements for gestational age. Group III are term infants but small for gestational age (SFD)." The case selection and study methods, the techniques used, and the statistical analysis are explained. Much data are presented in tables and may be used as standards. The findings indicated that although the SFD group of infants (III) had the largest mean measurements of all the low birth weight infants at birth, by age one year the preterm infants in Groups I and II had surpassed the SFD infants in velocity and distance growth. "At 1, 2, and 3 years the SFD infants had the smallest mean measurements of all the study groups of low birth weight infants. Comparative full-term infants were larger than low birth weight infants from birth through 3 years of age." Numerous other studies are mentioned, and a 59-item bibliography follows the text.

89. Crystle, C. Deans; Breuning, Frank; Dubin, Norman H.; Grannis, George F.; Stevens, Vernon C.; and Townsley, John D.: "Blood Disappearance Rates of Certain Hormones and Enzymes Advocated as Fetoplacental Function Tests," *Obstetrics and Gynecology*, 43:41-45, January, 1974.

The puerperal blood disappearance rates of six substances purported to be of use in assessing fetoplacental status were determined as described in seven patients having had normal pregnancies. Three of the substances were the hormones serum unconjugated 17 B-estradiol, serum total estriol, and human chorionic somatomammotropin, and the other three substances were the enzymes heat stable alkaline phosphatase, cystine aminopeptidase, and diamine oxidase. "When a pattern of decreasing levels is used as an index of fetoplacental compromise, the rate at which the substance is cleared from the blood becomes an important consideration. The faster the disappearance rate of the substance, the shorter the time lag between compromise of the fetus or placenta and its potential detection." Findings indicated that the "disappearance rates of the hormones were faster (minutes) than the enzymes (days) providing a theoretic time advantage of the former in minimizing time lost between fetoplacental compromise and its earliest possible detection."

90. Cser, Agnes, and Milner, R.D.G.: "Metabolic and Hormonal Changes During and After Exchange Transfusion with Heparinized or ACD Blood," *Archives of Disease in Childhood*, 49:940-945, December, 1974.

Studied and compared during and for three hours after exchange transfusion were concentrations of plasma glucose, free fatty acid (FFA), insulin, and growth hormone in nine jaundiced infants having a total of ten transfusions using blood preserved with acid citrate and dextrose (ACD) and eight jaundiced infants having a total of nine transfusions using heparinized blood. The clinical details of these cases are described. Findings indicated that "infants transfused with ACD blood are at risk from past transfusion hypoglycaemia, whereas those given heparinized blood are at risk from a greater rebound rise in unbound unconjugated bilirubin. Both risks may be reduced by feeding the infant as soon as is practicable." Conclusions relative to clinical practice are presented.

91. Dale, G.; Oxley, A.; and Walker, W.: "Isoelectric Focusing Patterns of Amniotic Fluid Proteins in Pregnancy Complicated by Rhesus Isoimmunization," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 83:374-379, May, 1974.

The protein patterns of amniotic fluid were studied in 66 samples of amniotic fluid from 55 women with rhesus isoimmunization by employing the technique of isoelectric focusing in polyacrylamide gel. The severity of the hemolytic disease in these cases was then determined after delivery and results were correlated with the protein patterns observed. "There were no specific changes in protein pattern which could be related to the severity of haemolytic disease. Qualitative changes in the electrophoretic mobility of transferrin were demonstrated. Serial investigations showed that these changes were related to gestational age and were probably a feature of normal pregnancy. The phenomenon appears to be due to alteration in the sialic acid content of the transferrin, presumably the result of alteration in neuraminidase activity." Findings are discussed and interpreted.

92. Dawood, M. Yusoff, and Ratnam, S.S.: "Serial Estimations of Serum Unconjugated Estradiol-17β in High-Risk Pregnancies," *Obstetrics and Gynecology*, 44:200-207, August, 1974.

Serial estimations of serum unconjugated estradiol-17β (E_2) were performed as described in the following cases: Ten pregnancies and three twin pregnancies complicated by hypertension, eight uncomplicated twin pregnancies, three uncomplicated triplet pregnancies, two cases of bad obstetric history, and seven cases of intrauterine death. Clinical details of these cases are presented, and findings are reported for each of these groups of patients. "The advantages and potential value of serum E_2 measurement as an index of placental function are discussed."

93. Dawood, M. Yusoff, and Ratnam, S.S.: "Serum Unconjugated Estradiol-17β in Normal Pregnancy Measured by Radioimmunoassay," *Obstetrics and Gynecology*, 44:194-199, August, 1974.

Serum unconjugated estradiol-17β (E_2) was measured by a described radioimmunoassay method with the blood samples obtained from 294 normal single pregnancies at various stages of gestation, 28 samples from uncomplicated twin pregnancies, and 12 samples from uncomplicated triplet pregnancies. Fluctuations throughout the day in the serum unconjugated estradiol-17β were studied as well as the scatter and range of the values at various periods throughout pregnancy. Serum E_2 levels in twin and triplet pregnancies were found to be "usually much higher than for single pregnancies or within the normal range for single pregnancies."

94. deHaven, George E.: "Is Selective Hearing an Occupational Hazard in Physical Therapy? Are You Listening?" *Physical Therapy*, 54:1301-1305, December, 1974.

Landmark court decisions and subsequent legislation on the 'right to education' and the 'right to treatment' of handicapped children are reviewed, and the impact and relevance of these events to physical therapy are discussed. As a result of these decisions and laws, "thousands of handicapped children who otherwise would have stayed out, dropped out, or have been denied admission to school now have become the responsibility of the public education system. Inherent in this

responsibility to educate is the mandate to provide those habilitation services which will foster the child's readiness to learn. No longer shall the child be refused admission to the public education system because of his level of physical functioning. He has the right to treatment." "Without exception, special education legislation has incorporated the provision of physical therapy service in the public schools." The profession of physical therapy must therefore adapt to this expansion. Areas in which attention must be directed are undergraduate and graduate physical therapy education programs and research.

95. DeSouza, S.W., and Milner, R.D.G.: "Clinical and CSF Studies in Newborn Infants with Neurological Abnormalities," *Archives of Disease in Childhood*, 49:351-358, May, 1974.

"The aims of [this] study were to identify newborn infants with the syndromes described by Prechtl (1965) and to examine inter-relations between them and (a) certain factors in the prenatal, natal, and postnatal period; (b) alterations in the composition of the CSF; (c) the diagnostic and therapeutic value of removing CSF by cisternal puncture and thus possibly reducing intracranial pressure; and (d) the incidence of neurological abnormalities during the first year." A total of 34 infants, having abnormal neurologic signs but no specific diagnoses, and 49 normal infants were studied during the newborn period, including a neurological examination, cisternal puncture, and lab and radiological studies. Of the 34 abnormal infants, 18 were diagnosed as having the hyperexcitability syndrome and 16, the apathy syndrome. "The apathy syndrome was associated with apnoeic attacks, absent sucking, swallowing, and Moro responses as well as pneumonia. The hyperexcitability syndrome was associated with a history of fetal distress, a very poor condition at birth, and also absent sucking and swallowing responses." CSF findings are reported with the majority of the 34 abnormal infants having either blood-stained or xanthochromic CSF. During their first year, 30 of the abnormal and 49 normal infants were seen as out patients. Of these 30 infants, five were seen to have other neurologic abnormalities during the first year which were subsequent to the neonatal period. These abnormalities are described. "This study shows that clinical diagnosis of the apathy or hyperexcitability syndrome in the newborn period has diagnostic and prognostic significance."

96. Diamant, Yoram Z.; Sadovsky, Eliahu; and Polishuk, Wolfe Z.: "Leukocyte Alkaline Phosphatase and Urinary Estriol in the Evaluation of Placental Functions," *Obstetrics and Gynecology*, 43:186-190, February, 1974.

From the 35th to the 39th weeks of pregnancy the leukocyte alkaline phosphatase (LAP) and urinary estriol values were determined as described and compared as to "their reliability and sensitivity in the detection of placental dysfunction and fetal prognosis" in 219 normal and complicated pregnancies. The complications in these cases are listed. "While both tests gave low values in severe preeclamptic toxemia, the leukocyte alkaline phosphatase (LAP) test was more sensitive than the urinary estriol test in cases of mild preeclampsia. Furthermore, intrauterine fetal death was preceded by an acute surge in LAP scores. This LAP surge may serve as an indicator of acute intrauterine fetal distress, suggesting the need for prompt delivery." Findings are discussed.

97. Dinwiddie, R.; Mellor, D.H.; Donaldson, Stella H.C.; Tunstall, M.E.: and Russell, G.: "Quality of Survival After Artificial Ventilation of the Newborn," *Archives of Disease in Childhood*, 49:703-710, September, 1974.

In order to assess possible long-term damage from artificial ventilation of the newborn, 50 children, ages 4 to 8 years, who had required artificial ventilation as neonates were followed. Of these 50 children, "44 (88%) had no serious mental or physical handicap." It was possible to match 35 of these children "with paired controls who had also had respiratory distress but had not required artificial ventilation." These children were studied and compared regarding respiratory function, physical growth, and neurological and psychological progress. Methods of assessment are described. Only minor differences were found between the two groups. "It is concluded that the quality of survival after artificial ventilation of the newborn justifies the procedure."

98. Diullo, Gene A., and Stolov, Walter C.: "Overhead Suspension Apparatus for Wheelchairs," *Physical Therapy*, 54:154-155, February, 1974.

Such an apparatus is described and pictured along with instructions on its construction. This wheelchair overhead suspension appartus was developed to allow the patient with C6 quadriplegia to lift his body and eliminate pressure over the ischial tuberosities in order to prevent ischial decubitus ulcers.

99. Dobbing, John, and Smart, J.L.: "Vulnerability of Developing Brain and Behaviour," *British Medical Bulletin*, 30:164-168, May, 1974.

The period of "the brain growth spurt" is explained, and the physical effects of growth restrictions during this period are described. Also considered are the problems encountered in attempting to assess behavioral changes caused by growth restriction. Evidence from animal studies of the vulnerability of developing behavior from imposed early growth restriction is presented, and the "possible significance of animal experiments for human development" is discussed. Conclusions are reported. "We believe that much that is important to man remains to be learned from animal experiments of the type discussed, however crude the approach may be in relation to the true complexity of human brain and behaviour. Extrapolations from other animals to man will, however, have to be somewhat more responsible than has sometimes formerly been the case. The comparatively large proportion of the human brain growth spurt which is postnatal should make it easier to promote good brain growth in our species by providing good environmental conditions at this time, both for the brain and for the 'mind,' and not until we have done this will we begin to be able to measure the possible contribution of inheritance to the sum of an individual's achievement."

100. Domino, Edward F.: "Centrally Acting Skeletal-Muscle Relaxants," *Archives of Physical Medicine and Rehabilitation*, 55:369-373, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Some of the centrally acting skeletal-muscle relaxants that have been used in the treatment of spasticity are listed and discussed. The pharmacologic approaches that have been used in the treatment of spasticity are historically reviewed, and areas of future pharmacologic study are considered.

101. Doran, T.A.; Benzie, R.J.; Harkins, J.L.; Jones Owen, V.M.; Porter, C.J.; Thompson, D.W.; and Liedgren, S.I.: "Amniotic Fluid Tests for Fetal Maturity," *American Journal of Obstetrics and Gynecology*, 119:829-837, July 15, 1974.

Using 252 samples of amniotic fluid, 18 biochemical parameters and one cytologic test were studied to determine their value in assessing fetal maturity. Among the 252 samples studied were 13 from seven patients with intrauterine growth retardation, 13 from ten patients with diabetes, 19 from 13 patients with hypertensive disorders, and 35 from 18 patients with Rh isoimmunization. "Ten parameters showed a trend with gestation but the three best tests were percentage of lipid-positive cells, lecithin/sphingomyelin ratio (L/S), and creatinine. With the use of a graph containing the mean value of the three key parameters, an estimated period of gestation was produced which was 95 per cent accurate for any individual sample. With some minor deviations the three tests and the estimated period of gestation based on the three tests continued to be accurate in abnormal pregnancy states."

102. Douek, Ellis; Gibson, William; and Humphries, Keith: "The Crossed Acoustic Response and Objective Tests of Hearing," *Developmental Medicine and Clinical Neurology*, 16:32-39, February, 1974.

Objective tests for assessing the hearing of children are discussed. Methods described include the use of auditory stimuli to produce electrical changes in muscles, cortical evoked response audiometry, and electrocochleography. The method of recording crossed acoustic responses is then explained, including the apparatus used. Also presented are clinical results from the first 100 children tested, of whom 80% were under age six years. "The crossed acoustic test is a new development, and its main virtues are that it can be easily and simply applied to all children, even when there is some active resistance, without recourse to sedation or anaesthesia. The preliminary results have been encouraging and suggest that it can be used as a screening test during the clinic."

103. Drazancic, Ante, and Kuvacic, Ivan: "Amniotic Fluid Glucose Concentration," *American Journal of Obstetrics and Gynecology*, 120:40-48, September 1, 1974.

Amniotic fluid glucose was estimated in 350 amniotic fluid samples from 278 normal and pathologic pregnancies at various periods of gestation. The findings in the normal pregnancies are compared to those in the pregnancies having various complications, and on the basis of these findings, the "clinical significance and prognostic value of amniotic fluid glucose determinations" are discussed. "From the material presented, three facts can be derived: (1) With progression of normal pregnancy, there is a progressive decrease of the amniotic fluid glucose concentration; (2) in diabetic pregnancies, with raised maternal blood glucose levels, the amniotic fluid glucose concentration is also elevated; (3) in pregnancies at risk, as in patients with hypertension, pregnancies with infants small for gestational ages and prolonged pregnancies, the amniotic fluid glucose concentration is lowered and frequently not detectable." Also, "in cases with lowered amniotic fluid glucose concentrations, especially in cases without evidence of any glucose, there is a statistically significant higher incidence of depressed neonates as indicated by the Apgar scores and pH values. With lowered estriol excretion or with meconium-stained liquor amnii, the glucose concentration is significantly lower." The importance of these findings from both the practical and the theoretical points of view is considered.

104. Dreier, Theodore, and Wolff, P.H.: "Sucking, State, and Perinatal Distress in Newborns," *Biology of the Neonate*, 21:16-24, 1972.

In order to assess the value of the rhythmic features of non-nutritive neonatal sucking as an "indicator of minor disturbances in central nervous system function of infants without obvious signs of neurological impairment," such sucking was studied as described in two sleep states and compared in seven normal full-term neonates and in eight neonates having a history of perinatal distress (HPND) but no gross neurological signs. "The HPND infants showed greater variability in duration of sucking bursts, rests, and onset intervals than normal infants. They also did not show any of the differences in variability of sucking patterns in regular and irregular sleep that are characteristic of normal infants." Neither a neurological screening exam nor the routine neurological hospital examination distinguished between these two groups of infants. "Since differences in the temporal organization of sucking patterns can be defined quantitatively, the analysis may contribute to the neurological evaluation of 'high risk' infants who show no clinical neurological signs."

105. Drillien, C.M.: "Prenatal and Perinatal Factors in Etiology and Outcome of Low Birth Weight," *Clinics in Perinatology*, 1:197-211, September, 1974.

The term 'low birth weight infant' is discussed, and various definitions of low birth weight are considered. The factors that affect birth weight and gestation are briefly examined as is the effect of poor fetal growth on the development of the brain. The Edinburgh Study is then described. A group of 283 children, who had been born in Edinburgh between 1966 and 1970 and who had weighed 2000 g. or less at birth, were followed to age three years or older in in order to relate the outcome in these cases to etiologic factors. These infants were classified into three groups as described on the bases of intrauterine growth: (1) well grown for gestational age, (2) small for date, and (3) very small for date. An attempt was made at birth in these cases to determine the cause of the premature delivery or the intrauterine growth retardation. "Analysis of the data suggested that in 5 of 6 of these infants the primary cause of low birth weight could be presumed with some confidence to be: (1) those whose premature delivery and/or low birth weight was most probably due to developmental abnormality in the fetus, i.e., to adverse factors occurring in early pregnancy; (2) those who had been subjected to severe complications in later pregnancy; and (3) those who did not appear to have been affected by any adverse prenatal conditions and at the time of birth were probably potentially normal." A described scoring system was used in assessing the mental and neurological status of these children, and these findings were related to the above etiologic characteristics. Practical implications and conclusions are presented.

106. Dudenhausen, R., and Dudenhausen, J.W.: "Human Placental Lactogen Levels in the Serum During Early Pregnancy," *Journal of Perinatal Medicine*, 2:93-100, 1974.

Blood samples were obtained from the cubital vein of 195 women between the 6th and 20th weeks of pregnancy. These women were placed in one of the following three groups based on the clinical course of their pregnancies: normal pregnancies, threatened pregnancies with successful outcome, and threatened pregnancies with unsuccessful outcome. HPL levels were determined in the serum samples as described, and graphs display the HPL values found in each of the three

groups. Conclusions are presented of which the most important are: "1. One single HPL determination with a result within the area of scatter for normal pregnancies or for threatened pregnancies with successful outcome is an indication that placental function is intact (diagnostic statement). One single HPL determination with a result below the area of scatter for threatened pregnancies with successful outcome may be an indication of disturbed placental function. 2. Continuously increasing HPL values within the area of scatter for normal pregnancies or for threatened pregnancies with successful outcome indicate that pregnancy will take a normal course (prognostic statement). No increase or decrease of HPL values suggests a more favorable prognosis."

107. Duff, G.B., and Brown, J.B.: "Urinary Oestriol Excretion in Twin Pregnancies," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:695-700, September, 1974.

A total of 201 twenty-four hour urinary estriol estimations from 50 twin pregnancies were retrospectively studied. Findings are presented separately for the 32 pregnancies resulting in 'normal' twins, the five pregnancies in which one twin was stillborn, the six pregnancies in which a neonatal death occurred including one pregnancy also involving a stillbirth, and eight pregnancies involving small-for-dates or intermediate weight infants as defined. "In general, the oestriol values were not low before or after intrauterine death of one fetus or in pregnancies with intrauterine growth retardation. The trends in serial oestriol values were of more relevance in assessing fetal jeopardy than grading the values as normal or low." The urinary estriol findings are compared to those seen in singleton pregnancies, and the differences are discussed.

108. Dunn, Leo J.; Bush, Charles; Davis, S.E., III; and Bhatnagar, A.S.: "Use of Laboratory and Clinical Factors in the Management of Pregnancies Complicated by Maternal Disease," *American Journal of Obstetrics and Gynecology*, 120:622-632, November 1, 1974.

Modern clinical and laboratory methods were used in the Obstetric Service of the Medical College of Virginia Hospitals in the management of 300 pregnancies in which various complications occurred. Data indicated that the L/S ratio in amniotic fluid was highly reliable in predicting fetal lung maturity in cases of premature rupture of membranes. "The L/S ratio distinguished those patients who would benefit from immediate delivery from those who would benefit from expectant management." The L/S ratio was also found to be a useful tool in the management of 47 patients who underwent repeat cesarean section. Frequent urinary estriol assessment and use of the amniotic fluid L/S ratio were used in the management of 14 diabetic pregnancies with no fetal or neonatal deaths occurring. A case report is presented in which the management of a patient having Class R diabetes mellitus is described. The management and outcome of 21 hypertensive pregnancies are also explained. "Our experience to the present time indicates that the progressive addition of laboratory aids to the clinical management of high-risk pregnancies has brought valuable tools to the practicing clinician. The proper use of individual tests, alone or in combination, appears to have improved our ability to manage a variety of obstetric problems." Additional discussion is conducted by Drs. Nathan Kase, Frank C. Greiss, Jr., William N. Spellacy, and Dunn.

109. Dweck, Harry S.; Huggins, William; Dorman, Layton P.; Saxon, Samuel A.; Benton, John W., Jr.; and Cassady, George: "Developmental Sequelae in Infants Having Suffered Severe Perinatal Asphyxia," *American Journal of Obstetrics and Gynecology*, 119:811-815, July 15, 1974.

Examined and compared at 15 to 40 months of age were 15 infants who survived perinatal asphyxia and who "required positive-pressure oxygen by endotracheal tube and umbilical venous buffer immediately after birth" (asphyxiated group), and 14 healthy mature infants who were born at the same hospital (nonasphyxiated group). The 1-minute Apgar score of the asphyxiated group was three or less while that of the nonasphyxiated group was seven to ten. Medical records of all infants were reviewed, and the infants were examined medically, neurologically, and psychologically as described. "Ten asphyxiated and 11 nonasphyxiated infants had normal neurologic examinations while two asphyxiated and three nonasphyxiated babies had borderline results. The three intrauterine growth-retarded babies in the asphyxia group all had neurologic deficits. Excluding these three badly damaged growth-retarded babies (mean I.Q. = 31), mean I.Q. scores of asphyxiated and nonasphyxiated groups were identical (96, asphyxiated; 96 nonasphyxiated)." These and other findings are discussed.

110. Dwyer, John F.: "Teenage Pregnancy," *American Journal of Obstetrics and Gynecology*, 118:373-376, February 1, 1974.

Studied were 231 pregnancies in girls 12 to 16 years of age at the time of delivery. A government Maternal and Infant Care project allowed for the prenatal care of these patients. Results are presented with regard to the age, race, and marital status of the girls; their prenatal care; parity; obstetric complications; labor and delivery; maternal and fetal outcome; and fetal weight. Although other data have shown there to be an increase of obstetric complications in teenage pregnancies, the findings in this study showed no such increase in complications, "except for a somewhat elevated prematurity rate." "The possible role of prenatal care is discussed."

111. "Educating Long-Stay Children in Hospital," *Special Education: Future Trends*, 1: 26, September, 1974.

"A recent circular (5/74) from the Department of Education and Science and the Department of Health and Social Security [England] advises both health and education authorities on the education of the mentally handicapped and other long stay children in hospital." The principles stated in this circular are reviewed as are the advice given regarding assessment of the children, the needing for joint staff training, the provision to be made for the children during holiday periods, and the need for in-service training of teachers.

112. Edwards, M.J.; Lyle, J.G.; Jonson, K.M.; and Penny, R.H.C.: "Prenatal Retardation of Brain Growth by Hyperthemia and the Learning Capacity of Mature Guinea-Pigs," *Developmental Psychobiology*, 7:579-584, November, 1974.

Pregnant guinea pigs were heat-stressed as described on Days 20-24, 40-44, or 56-60 of gestation. These mothers were matched with similar control mothers who were not heat-stressed. Offspring of both groups were reared together as described, and when mature, were tested on learning experiments and later killed for study. "Mature guinea-pigs from mothers heat-stressed on Days 20-24 of gestation had smaller whole and part brain weights and made more initial and perseverative errors in the original and reversal tasks on a serial discrimination task than control guinea-pigs. Offspring from mothers heated on Days 40-44 had smaller whole brain, brain stem, and cerebellar weights and made more perseverative errors on the reversal task than controls. No differences in whole or part brain weights and learning capacity were found between progeny from mothers heated on Days 56-60 and control animals." Findings are discussed.

113. Effer, S.B.: "Biochemical and Biophysical Indices of Fetal Risk," *Clinics in Perinatology*, 1:161-172, March, 1974.

The risk scoring system used by the author in the Perinatology Program at McMaster University in Ontario is described. It is a modification of the McGill University Risk Assessment Form. Then described are the biochemical indices of fetal risk which are "divided into those related to maternal, placental, and fetal functions." Biophysical indices of fetal risk are also considered including ultrasonography, the oxytocin challenge test, fetal biophysical indices, fetal heart rate, rheography, and anmioscopy. A prospective study is then reported in which the relative predictive accuracy of four parameters of fetal risk was investigated. "The four parameters studied were: ultrasound measurement of the fetal biparietal diameter, measurement of the size of the uterus from symphysis pubis to fundus uteri, determination of 24 hour total maternal urinary estrogens, and voltage of the fetal R-wave." Although ultrasound measurement was found to be "the overall best predictor for fetal growth extremes, both the large for dates, and the small for dates fetus, for the entire pregnancy viewed as a whole," the data indicated "that there are differences in the predictive accuracy of these different parameters at different stages of gestation."

114. Ekgren, Josef, and Moe, Narve: "Transabdominal Isthmic Amniocentesis in Rh-Immunization with Particular Reference to Complications," *Acta Obstetricia Et Gynecologica Scandinavica*, 53:263-265, 1974.

Retrospectively studied were 530 transabdominal isthmic amniocenteses which were performed on 231 Rh-immunized patients from 1969 to 1973. The technique is described as are the results, including the complications, in these cases. This method is compared to other methods of amniocentesis. "The present study indicates the advantage of transabdominal isthmic amniocentesis: it offers a minimum risk for the fetus and is rarely unsuccessful."

115. Elek, S.D., and Stern, H.: "Development of a Vaccine Against Mental Retardation Caused by Cytomegalovirus Infection in Utero," *Lancet*, 1:1-5, January 5, 1974.

The technical process whereby this vaccine was developed is described as is its testing in volunteers. "The subcutaneous route of inoculation was successful in stimulating neutralising and complement-fixing antibody production without important side-effects. It is suggested that the use of such a vaccine in adolescent girls would reduce the incidence of primary cytomegalovirus infection in pregnancy and thus eliminate fetal brain damage due to this cause."

116. Ellingson, Robert J.; Dutch, Stephen J.; McIntire, Matilda S.: "EEG's of Prematures: 3-8 Year Follow-Up Study," *Developmental Psychobiology*, 7:529-538, November, 1974.

Two studies are reported. Study 1 was conducted to validate a classification system of neonatal EEG's, which contains four classes on the basis of progressive maturity. Some 273 neonatal EEG's were obtained from 117 infants who were divided into three groups: (1) 81 prematures, (2) 11 small-for-dates infants, and (3) 25 full-term infants. These EEG's were then classified using the described system. "Both the order in which the 4 classes of EEG's occurred for subjects upon whom more than 1 EEG was obtained, and the distributions of the ages over which the 4 classes were observed confirmed that the classes do indeed represent a maturational sequence of EEG pattern changes." In Study 2, 46 of the original 81 premature infants were followed and clinically examined between the ages of 3 years 9 months and 8 years 7 months. Of these 46 children, 34 were found to have developed normally and 12 abnormally. These abnormalities are described. These 2 groups of children were then compared on 6 listed variables which included aspects of their neonatal EEG's to determine any prognostic signs. Findings were related to clinical outcome. "The results do not demonstrate the usefulness of the routine EEG as a prognostic indicator in neonates not displaying specific pathology at birth. They do offer some evidence of a relationship between immaturity of the EEG relative to CA [conceptional age] in the neonatal period and the later manifestation of congenital disorders involving the brain, but the tendency, even if confirmed, may not prove strong enough to warrant prognostic decisions in individuals."

117. Elliott, Elizabeth; Moncrieff, M.W.; and George, W.H.S.: "Phototherapy for Hyperbilirubinaemia in Low Birthweight Infants," *Archives of Disease in Childhood*, 49:60-62, January, 1974.

Studied were 88 neonates whose birthweights were 1500 g to 2500 g and whose serum bilirubin levels had reached 10 mg/100 ml. These babies were alternately placed in either a group who received phototherapy as described or a group who were not treated unless the bilirubin exceeded 15 mg/100 ml (controls). Findings indicated that the serum bilirubin levels did not exceed 15 mg/100 ml in any infant in the phototherapy group, but did exceed this level in 44% of the control infants who were untreated. "We conclude that phototherapy is a safe and effective way of treating hyperbilirubinaemia in low birthweight infants, and suggest it should be started when the bilirubin reaches 12 mg/100 ml, except for babies under 1500 g birthweight when it should be started at 10 mg/100 ml."

118. Ellis, Keith O., and Carpenter, John F.: "Mechanism of Control of Skeletal-Muscle Contraction by Dantrolene Sodium," *Archives of Physical Medicine and Rehabilitation*, 55:362-369, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Findings of experiments are reported which describe "the effect of dantrolene sodium on the whole animal and identifies the site of action in skeletal muscle." "Dantrolene sodium causes skeletal-muscle relaxation in laboratory animals at doses with which there is no depression of the central nervous system, motor incoordination, respiratory depression, or acute toxicity. The action of the drug is not related to any effect on neuromuscular transmission or to an action on the electrically excitable surface membrane of the muscle. Evidence is presented that dantrolene sodium dissociates excitation-contraction coupling in skeletal muscle and impairs caffeine-induced muscle contractures. It is hypothesized that the muscle relaxation is a result of interference with the release of calcium from the sacroplasmic reticulum."

119. Engel, Gregory M., and Staheli, Lynn T.: "The Natural History of Torsion and Other Factors Influencing Gait in Childhood," *Clinical Orthopaedics and Related Research*, 99:12-17, March-April, 1974.

To establish a basis for comparison, hip rotation, genu valgum and varum, tibial torsion, thigh-foot angle, angle of gait, and arch development were measured as described in 160 normal infants and children. These subjects were placed in 16 age groups ranging from one day old to 14 years. Results are summarized and discussed for each of these parameters.

120. England, P.; Lorrimer, D.; Fergusson, J.C.; Moffatt, Anne M.; and Kelly, Anne M.: "Human Placental Lactogen: The Watchdog of Fetal Distress," *Lancet*, 1:5-7, January 5, 1974.

The advantages of the assay of human placental lactogen (HPL) as a screening test for fetal distress are noted. Studied were 547 patients who were considered to be "clinically normal" during pregnancy. Serum HPL levels were determined in these cases as described. Of the 547 patients, "429 were delivered of

healthy infants who were neither distressed, asphyxiated, nor dysmature and therefore constituted our normal population." The other cases formed a group in which the pregnancy resulted in a distressed infant. Although there was overlap in the HPL values between these two groups, they were found to be significantly different. Findings indicated "there is a 56% chance of perinatal complications if the hormone concentration has been in the fetal danger zone (more than 2 S.D. below normal) on at least one occasion."

21. Engsner, Gunnar; Habte, Demissie; Sjögren, Irene; and Vahlquist, Bo: "Brain Growth in Children with Kwashiorkor," *Acta Paediatrica Scandinavica*, 63:687-694, September, 1974.

Head circumference measurement, transillumination, and ultrasonic echo ventriculography were used to determine brain growth in 53 children with either kwashiorkor or marasmic kwashiorkor, as defined. Ten of these children were then followed-up for six months during a nutrition rehabilitation program. Examination of the 53 children showed head circumference to be reduced, the transillumination results to be abnormal, and the lateral ventricles to be increased as seen from the echo ventriculograms. "A gradual and complete normalization of the transillumination and echo ventriculographic findings" was seen in the ten children who were followed. Also noted was "a clear-cut tendency to catch up in head circumference in relation to age." Findings are discussed.

122. Engsner, Gunnar, and Woldemariam, Teklesion: "Motor Nerve Conduction Velocity in Marasmus and in Kwashiorkor," *Neuropädiatrie*, 5:34-48, February, 1974.

Motor nerve conduction velocity (MCV) was studied as described in 44 control children, 40 children with marasmus, and ten children with kwashiorkor. All children ranged in age from 1 to 36 months. Since marked hypothermia is often noted in children with marasmus and kwashiorkor, this influence on MCV was corrected in statistical analysis as explained. Only one MCV examination was conducted on the children with marasmus before nutritional rehabilitation was begun, and these children were found to have corrected values within the normal range. Weekly MCV examinations were conducted on the children with kwashiorkor for five weeks. In these children "on admission the MCV values were reduced to about 50% of the control values, a reduction which only to a limited extent could be explained by peripheral hypothermia. During nutrition rehabilitation the MCV values in all cases increased rapidly up to a normal or almost normal level."

123. Epstein, H.T.: "Phrenoblysis: Special Brain and Mind Growth Periods. I. Human Brain and Skull Development," *Developmental Psychobiology*, 7:207-216, May, 1974.

The literature is reviewed in order to assess the validity of the hypothesis "that human brains have periods of specially large increases in weight that are uncorrelated or only weakly correlated with periods of general body growth." Data was gathered from previous studies on brain weight and head size and analyzed as described. Findings indicated "that indeed, characteristic spurts in brain and skull occur, roughly, at ages 6-8, 10-12, 14-17, and possibly 2-4 yr. The spurts are, as expected, especially clear in data from longitudinal studies, although spurts are detectable in the data from every study thus far found in the literature."

124. Epstein, H.T.: "Phrenoblysis: Special Brain and Mind Growth Periods. II. Human Mental Development," *Developmental Psychobiology*, 7:217-224, May, 1974.

Investigated was the question of growth spurts in human mental functioning. "Data from 13 independent studies are shown to give a highly consistent spectrum of ages at which spurts are found; these are 2-4, 6-8, 10-12, and 14-16, with an especially clear low rate of growth at 12-14 yr. These ages correlate very well with those found for spurts in brain and skull sizes so that an obvious working hypothesis is that mutations for increased brain weight were selected for by virtue of the greater mental ability thus afforded to humans."

125. Eviatar, L.; Eviatar, A.; and Naray, I.: "Maturation of Neurovestibular Responses in Infants," *Developmental Medicine and Child Neurology*, 16:435-446, August, 1974.

The appearance of vestibular responses (nystagmus) was tested by pre-rotatory stimulation and by ice-cold caloric irrigation as described in 121 randomly selected infants within 10 to 75 days of birth. The infants were divided into full-term and pre-term groups and further subdivided into small for gestational age (SGA), appropriate for gestational age (AGA), and large for gestational age (LGA) groups. Findings showed that with the pre-rotatory stimulation, 83% of the AGA infants responded with nystagmus, but only 24% of the SGA infants so responded. With the ice-cold calorie irrigation, 69% of the AGA infants responded with nystagmus, but only 26% of the SGA infants so responded. Within the test period of 10 to 75 days of birth, none of the pre-term infants responded with nystagmus, while "the LGA babies responded with a strong nystagmus at an early age." Findings are discussed. "The study demonstrates the importance of birthweight to the maturation of vestibular responses as an index of central nervous system maturation."

126. Ewing, Douglass E.; Farina, James R.; and Otterson, Warren N.: "Clinical Application of the Oxytocin Challenge Test," *Obstetrics and Gynecology*, 43:563-566, April, 1974.

Studied were 58 obstetric patients of whom 40 had described complications of pregnancy and were "considered likely to have placental insufficiency." The other 18 patients were randomly selected normal controls. Some 88 oxytocin challenge tests (OCT) were performed on these 58 patients. Steps for the standard procedure of the test are listed as are the criteria for a positive test. Tests were termed positive, negative, or 'suspicious' as defined. "Eight patients displayed late deceleration fetal heart patterns during oxytocin-induced contractions (positive OCT); all subsequently had labors characterized by similar fetal heart patterns. No patient with a negative OCT had a labor characterized by fetal distress, and no intrauterine deaths occurred within 1 week after a negative OCT." Findings are discussed, and the OCT is seen to be a simple test to perform that has proven useful in the management of patients having suspected placental insufficiency. "We conclude that a patient with a mature fetus and a positive OCT should be delivered as soon as possible, probably by cesarean section. Patients with a negative OCT could be followed weekly with an OCT, thereby possibly avoiding a difficult induction and delivery of a premature infant. Perhaps patients with a positive OCT and an immature infant could be assessed by daily estriol assays and frequent studies for fetal maturity."

127. Eyring, Edward J.; Earl, William C.; and Brockmeyer, J. Frederick: "Posterior Tibial Tendon Transfers in Neuromuscular Conditions Other Than Anterior Poliomyelitis," *Archives of Physical Medicine and Rehabilitation*, 55:124-126, March, 1974.

Described is the experience of the authors with 64 posterior tibial tendon transfers in 42 patients having cerebral palsy (13), muscular dystrophy (9), clubfoot (8), myelomeningocele (7), Charcot-Marie-Tooth disease (2), or other neuromuscular conditions (3). The general indications for the use of the procedure and the goals of the transfer are listed. The patients were followed for an average period of 28 months with results reported. "Clinical evaluation of patients following posterior tibial tendon transfer indicates that the procedure is of value for a variety of inversion, plantar flexion problems. Electromyographic data are interpreted to indicate that the transfer can exert an active dorsiflexion eversion force."

128. Felsenthal, Gerald: "Nerve Blocks in the Lower Extremities: Anatomic Considerations," *Archives of Physical Medicine and Rehabilitation*, 55:504-507, November, 1974.

The obturator, the sciatic, and the tibial nerves are those commonly blocked to modify spasticity. In this report a technique of blocking is presented for each of these three nerves, "and anatomic reasons are presented to support the contention that each technique produces an optimal effect."

129. Felsenthal, Gerald: "Pharmacology of Phenol in Peripheral Nerve Blocks: A Review," *Archives of Physical Medicine and Rehabilitation*, 55:13-16, January, 1974.

Considered in this review article along with the pharmacology of phenol are the short-term and long-term tissue effects of the use of phenol in peripheral nerve blocks.

130. Fish, Susan L.: "Fishing Line Sinkers for Weighting a Walker," *Physical Therapy*, 54:868-869, August, 1974.

The insertion of padded fishing sinkers into the legs of a standard walker in order to weight the walker is described.

131. Fisher, David E., and Paton, John B.: "The Effect of Maternal Anesthetic and Analgesic Drugs on the Fetus and Newborn," *Clinical Obstetrics and Gynecology*, 17:2:275-287, June, 1974.

Reviewed are the placental transfer of drugs; the factors, both maternal and fetal, which influence this transfer and effect; and the fetal and neonatal effects of such drugs. Also presented in the form of a 4-page chart is current information on the "effects of drugs used for obstetric anesthesia and analgesia." Numerous drugs are listed followed by the maternal effects of these drugs that may adversely affect the fetus, the rate of placental transfer of the drugs, the cord level, the fetal and neonatal effects from each drug, and the method of neonatal excretion.

132. Fisher, Robert L., and Russman, Barry S.: "Genetic Syndromes Associated with Cerebral Palsy," *Clinical Orthopaedics and Related Research*, 99:2-11, March-April, 1974.

The term "cerebral palsy" is considered, and it is noted that only minimal attention has been directed toward familial cases and "the recently described genetic 'cerebral palsy' syndromes." Nine case reports of patients who "were identified in a cerebral palsy clinic population as having distinct heritable diseases" are presented. These cases illustrate the need to consider the possibility of genetic disease in diagnoses. Implications for genetic counselling, evaluation, and management are discussed.

133. Fisher, Shirley C.: "Lower Extremity Exercise Device Made from Recycled Materials," *Physical Therapy*, 54:376, April, 1974.

Such a device, to be used for exercising the hips, knees, and ankles, is described and pictured. Its primary materials consist of a mop or broom handle and pieces of rubber from a car inner tube. The handle is held with the hands. The device can be used while sitting in bed or in a wheelchair.

134. Fishman, Marvin A., and Palkes, Helen S.: "The Validity of Psychometric Testing in Children with Congenital Malformations of the Central Nervous System," *Developmental Medicine and Child Neurology*, 16:180-185, April, 1974.

Previous studies involving the validity of psychometric testing in infants and children are reviewed, including studies of cerebral palsied children. Serial psychometric testing was conducted on 31 children with congenital malformations of the central nervous system who ranged in age from 6 months to 5 years. Tests used and frequency of examination is described. "The developmental quotient obtained on the Cattell Intelligence Scale administered at 18 months was found to have a high correlation coefficient with later intellectual achievement - as measured by Stanford-Binet Intelligence Scale at five years of age. Psychometric testing performed in infancy in this group of patients appears to have predictive value for later intelligence and may supply useful information for counseling parents and in planning educational needs."

135. Fitzhardinge, P.M.; Kazemi, M.; Ramsay, M.; and Stern, L.: "Long-Term Sequelae of Neonatal Meningitis," *Developmental Medicine and Clinical Neurology*, 16:3-10, February, 1974.

"Because previous reports lack long-term follow-up, with detailed assessment of the neurological and mental status of the survivors, the experience with neonatal meningitis between 1961 and 1970 at the Montreal Children's Hospital is reported in order to review (1) the incidence of long-term sequelae, including neurological, intellectual and developmental defects; and (2) the relationship of laboratory and clinical features of the disease to both immediate outcome and long-term sequelae." Included in the study were 37 cases of neonatal menigitis. The neonatal course of these infants is described. Twenty of these survived and of these 20, 18 were examined at ages ranging from one to ten years. Of these 18 children, ten were healthy and functioning well. "Only one child was sufficiently handicapped to require institutional care. Neurological abnormalities were severe and handicapping in one case and minimal in two others. EEG abnormalities were found in 10 of the 16 children tested and there was ventricular dilation in five cases. None of the children had nerve deafness, but speech was delayed or expressive ability was poor in 11 of the 15 children over two years of age. The relatively high proportion of children in this series who had had gram-positive organisms may account for the fact that 10 of the 18 children were functioning at an acceptable level for their ages. The data suggest that the initial level of CSF protein, in cases of neonatal meningitis may be of predictive value as to ultimate development."

136. Fleet, William F., Jr.; Benz, Edmund W., Jr.; Karzon, David T.; Lefkowitz, Lewis B.; and Herrmann, Kenneth L.: "Fetal Consequences of Maternal Rubella Immunization," *Journal of the American Medical Association*, 227:621-627, February 11, 1974.

The study population consisted of 19 women who had been immunized against rubella either shortly before becoming pregnant or during pregnancy. Of these 19 cases, eight had induced abortions, one aborted spontaneously, and ten delivered live infants, all of whom appeared to be normal at birth. These products of conception were studied as described. Eight of the live born infants were followed and reevaluated for three to 11 months, and developmental tests were normal. Findings from the abortion cases are also described. "Vaccine-like rubella virus was recovered from the eye of one aborted fetus, the only instance in which fetal infection was demonstrated. Lenticular abnormalities typical of congenital rubella was observed in the other fetal eye, and particles resembling rubella virus were seen on electron microscopy." Findings from this and other studies in this area are discussed. "The recovery of vaccine-like rubella virus from a fetus with histologic evidence of a cataract suggests that attenuated rubella virus may be teratogenic when given to susceptible women early in pregnancy or shortly before conception." Three precautions to be taken before immunizing postpubertal women against rubella are listed.

137. Fluge, Gjermund: "Clinical Aspects of Neonatal Hypoglycaemia," *Acta Paediatrica Scandinavica*, 63:826-832, November, 1974.

Studied were 50 hypoglycemic low birth weight infants and 17 hypoglycemic full term infants. Clinical findings in these cases were used to place the infants in one of three groups: Group A, Asymptomatic hypoglycemia; Group B, Symptomatic hypoglycemia; and Group C, Secondary hypoglycemia. Results are presented regarding the birth history and occurrence of toxemia of pregnancy in these cases, the age of the infant at the time of diagnosis, the pretreatment blood glucose values, the duration of the hypoglycemia, complicating disorders, and autopsy findings. "Frequency of hypoglycaemia in small for gestational age infants was markedly higher when toxaemia of pregnancy was noted, compared with infants born to non-toxaemic mothers." The findings are discussed from this study and other related studies.

138. Fluharty, Nancy Buono: "The Design and Standardization of a Speech and Language Screening Test for Use with Preschool Children," *Journal of Speech and Hearing Disorders*, 39:75-88, February, 1974.

Other such tests now in use are reviewed, and it is noted that "currently available speech and language screening procedures do not seem to assess all aspects of speech and language in a manner suitable for use with large numbers of children three to five years old." Then described is the design and preliminary standardization of a screening test to be used with this age group. "The rationale underlying this project is the psycholinguistic description of language as a transformational-generative grammar." Explained are the general design of the test, the selection of test items, the administration of the test, instructions given, and recording of results. Standardization procedures involved giving the test to 203 preschool children. The reliability and validity of the test were determined and more extensive standardization is being conducted. An appendix contains the test form and scoring form.

139. Foley, Thomas P., Jr.; Thompson, Robert G.; Shaw, Maurice; Baghdassarian, Alice; Nissley, S. Peter; and Blizzard, Robert M.: "Growth Response to Human Growth Hormone in Patients with Intrauterine Growth Retardation," *Journal of Pediatrics*, 84:635-641, May, 1974.

One or more daily doses of human growth hormone (hGH) were administered for from five to 18 months as described to 12 patients having had low birth weights and/or low birth lengths for gestational age. Ten of these 12 patients fulfilled the diagnostic criteria for intrauterine growth retardation (IUG). The patients ranged in age from four to 12 years when therapy was begun. In all but one patient there was significant delay in skeletal maturation. "Of the eight patients aged seven years or younger at the time of treatment, the growth rates of five (62.5 per cent) during treatment with hGH were at least twice their pre-treatment growth rate; in six (75 per cent) the pre-treatment growth rates were exceeded by 3.5 cm. or more per year." These and other findings are discussed and it is concluded that "in sufficient dose hGH is an effective therapeutic agent in some young patients who have had intrauterine growth retardation."

140. Francis-Williams, Jessie: *Children with Specific Learning Difficulties: The Effect of Neurodevelopmental Learning Disorders on Children of Normal Intelligence*. 2nd ed. New York: Pergamon Press, 1974. 229 pp.

"This book contains a report of original research into the possibility of early identification of children of normal intelligence, but with specific learning disorders believed to arise from neurodevelopmental dysfunction." Within the first three chapters of this book, the types of children to be included in such research are described, the major stages in early learning as set forth by Piaget are outlined, and the specific research study conducted is explained, including the factors that emerged from the pilot study, the battery of tests and procedures chosen, and the children tested. In the investigation, "23 boys and 21 girls, aged 3-4 years, (44 cases) who had been noted at birth as having minor neurological dysfunction were compared with 29 boys and 34 girls (63 controls) who were normal in development." Test results and observations that were made during the testing are presented. In Chapter 4 possible ways of helping pre-school children with specific developmental disabilities before they begin formal schooling are discussed. In Chapter 5 helping such children in the early school years is considered, including tests to be conducted. Chapters 6 and 7 describe "experiments in teaching children with specific learning difficulties" and "the outlook for the future," respectively. In the final chapter (8), the results are presented of a follow-up study of the children described in Chapter 3. This follow-up was designed to assess the value of the earlier findings on these children. Also included in this volume are an historical survey of research into specific learning difficulties, a bibliography, and an index.

141. Francis-Williams, Jessie, and Davies, Pamela A.: "Very Low Birthweight and Later Intelligence," *Developmental Medicine and Child Neurology*, 16:709-728, December, 1974.

Followed at from age four to 12 years were 105 of 120 children who had weighed 1500 g. or less at birth and who had been admitted to Hammersmith Hospital, London, between 1961 and 1968. Division was made as to small for dates and appropriate for dates and also into two 4-year periods because of differing treatment

methods in these two periods. The intelligence of these 105 children was measured using the Wechsler, Bender Gestalt, and reading tests as described. Full scale IQ findings were correlated with intra-uterine growth, birthweight and gestational age, neonatal illness, social class, sex, and head size. Very low IQ's were correlated with possible origin. Findings are also presented on performance and verbal IQ's and on the other tests administered. Results are discussed and conclusions presented. It was emphasized "that despite the over-all improvement in full scale IQ, one fifth of the sample have a performance IQ significantly below their verbal IQ, with consequent learning difficulties manifest in those of school age. Thus, although improved care and avoidance of iatrogenic handicap is certainly reaping rewards, there is still need for careful follow-up of this group. Early recognition of their learning difficulties, which appear to be due to disorderly mental development, and arrangements for the extra help they need, in smaller classes, would do much to assure them the time they probably require for developing a normal capacity for intelligence in learning."

142. Frank, H.-D.; Ballowitz, L.; and Schachinger, H.: "Ambulance with Intensive Care Facilities for the Transport of Infants At Risk," *Journal of Perinatal Medicine*, 1:125-132, 1973.

Reported are the results of developing a program for the transportation of high risk infants at the Children's Clinic of the Free University of Berlin. The importance of such transportation is discussed, and the three essential components in this program are individually explained and pictured. They are the transport incubator, the means of transport, and the transport personnel.

143. Freehafer, Alvin A.: "The Treatment of Myelomeningocele Patients with Paralytic Hip Deformities by Iliopsoas Transfer," *Paraplegia*, 11:295-305, February, 1974.

Problems in the hip joints and muscle imbalance in hip joints of children with myelomeningocele are discussed. Findings are reported for a group of 33 children with myelomeningocele who had a total of 61 iliopsoas transfers performed to restore muscle balance. At the time of surgery these patients ranged in age from one to nine years. These children are described as are the indications for iliopsoas transfer, the technique of operation used, and the results. "The correction of this imbalance by removing a deforming force and using the iliopsoas transfer to provide active abductor power and greater stability of the hip usually resulted in improved function and better gait."

144. Freeman, John Mark, ed. *Practical Management of Meningomyelocele*. Baltimore: University Park Press, 1974. 240 pp.

This book, written for the nonspecialist, grew out of the experiences of the contributors in the Birth Defects Treatment Center at the John Hopkins Hospital. Among the aspects of the management of meningomyelocele discussed in the 15 chapters are terminology, risks of occurrence and recurrence, embryology and pathology, "to treat or not to treat," and neurological examination. Also discussed are the neurosurgical, orthopedic, genitourinary tract, and psychosocial problems; the management of hydrocephalus; and the role of the clinic coordinator in the team approach to management. There are bibliographies, photographs, and an index.

145. Freeman, Roger K.: "Intrapartum Fetal Evaluation," *Clinical Obstetrics and Gynecology*, 17:3:83-94, September, 1974.

Described in this article are methods of fetal evaluation using electronic fetal monitoring techniques and fetal scalp blood sampling. The use of these two methods in combination is also considered.

146. Freeman, Roger K.; Bateman, Bruce G.; Goebelsmann, Uwe; Arce, Juan J.; and James, Jean: "Clinical Experience with the Amniotic Fluid Lecithin/ Sphingomyelin Ratio. II. The L/S Ratio in 'Stressed Pregnancies,'" *American Journal of Obstetrics and Gynecology*, 119:239-242, May 15, 1974.

A total of 81 amniotic fluid samples were obtained from 41 patients who had had consistently low 24 hour urinary estriol levels and who were said to have 'stressed pregnancies,' as described. L/S ratios were determined "in order to see if these 'stressed pregnancies' were associated with an accelerated rise in L/S ratio and presumably fetal pulmonary maturity." Of these 41 patients, 14 had a positive oxytocin challenge test. "The results suggest that, on the average, fetal pulmonary maturity as evaluated by L/S ratios is not accelerated in 'stressed pregnancies.'"

147. Freestone, D.S.: "Programmes for the Prevention of Rubella During Pregnancy by Active Immunization," *British Journal of Preventive and Social Medicine*, 28:258-264, November, 1974.

Studied and compared were the programs of active immunization for the prevention of rubella during pregnancy in the United States and in the United Kingdom. The advantages and disadvantages of each are discussed.

148. Frentz, Johnette M.; Gohd, Robert S.; and Woody, Norman C.: "Untreated Neonatal Herpes Simplex 2 Meningitis Without Apparent Neurologic Damage," *Journal of Pediatrics*, 85:77-79, July, 1974.

Such a case is reported.

149. Frigoletto, Fredric D.: "Management and Prevention of Erythroblastosis Fetalis," *Clinics in Perinatology*, 1:321-330, September, 1974.

The literature on this subject is reviewed, and the methods of prenatal management, selection of patients for intrauterine transfusion, and preventive measures practiced at the Boston Hospital for Women are described.

150. Fujiwara, M.; Basmajian, John V.; and Strom, C.H.: "Electromyographic Study of Hip Dislocations in Cerebral Palsy," *American Journal of Physical Medicine*, 53: 171-196, August, 1974.

Previous research on hip dislocation in cerebral palsy is reviewed. "The present electromyographic study was undertaken to determine whether or not postural reflexes affect the hip muscles in cerebral palsy; and, if so, how do the

responses correlate with the tendency to dislocation." Studied electromyographically were 25 hips of 15 spastic, severely involved, bed-ridden, cerebral palsied children, who ranged in age from three to ten years. Twelve listed and described, experimental conditions were recorded as explained. Findings are presented, including several reproductions of EMG recordings. These 12 conditions were supine position, prone position, vertical suspension, horizontal suspension, flexor withdrawal, extensor thrust, supporting reaction on the ground, supporting reaction while supine, crossed extension II, crossed extension I, asymmetric tonic neck reflexes, and symmetric tonic neck reflexes. "EMG was correlated with the skeletal abnormalities of the hip joint. In subluxated hips, more muscles showed activity more frequently than in either concentric and dislocated hips, and the activity pattern was mostly of either the flexion or extension synergies. The muscles of the concentric hips were less active and showed more flexion synergies and fewer extension synergies. In dislocated hips, the EMG pattern was miscellaneous." Findings are discussed, and three conclusions are presented.

151. Gabert, Harvey A., and Stenchever, Morton A.: "Electronic Fetal Monitoring as a Routine Practice in an Obstetric Service: A Progress Report," *American Journal of Obstetrics and Gynecology*, 118:534-537, February 15, 1974.

Data is presented and compared regarding the use of electronic fetal monitoring in an obstetric service for the years 1971 and 1972. The two years are compared with regard to the number of deliveries and monitored patients, the cesarean sections performed, the incidence of low Apgar scores, deceleration patterns, the relationship of Apgar scores to fetal heart rate patterns, the types of cord problems, the relationship of late-deceleration patterns to small placentas, and the relationship of variable-deceleration patterns to cord problems and Apgar scores. "Our statistics underscore Hon's findings that variable-deceleration patterns relate to cord complications; and late-deceleration patterns, to placental insufficiency. The marked decrease in the number of neonates with low Apgar scores is the result of fetal monitoring and improved clinical judgement." Criteria are listed which are followed in 1972 during labor if late deceleration patterns were seen.

152. Geber, W.F., and Schramm, L.C.: "Postpartum Weight Alteration in Hamster Offspring from Females Injected During Pregnancy With Either Heroin, Methadone, A Composite Drug Mixture, or Mescaline," *American Journal of Obstetrics and Gynecology*, 120:1105-1111, December 15, 1974.

Pregnant hamsters received on days eight and nine of gestation one subcutaneous injection of either heroin, methadone, a described composite drug mixture, mescaline, or saline (controls). The offspring of these hamsters were then observed as described for approximately 50 days. Both mothers and offspring were fed normally with weaning conducted at age 21 days. "The primary differences between the young from the drug-injected females as compared to the saline litters was a decreased average pup weight that increasingly became greater as the growth period continued. The decreased average weight was most pronounced in the methadone and heroin groups. The mescaline groups, originally very similar in average weight to control groups, began to lose weight at an increasing rate as the growth period continued." Other findings are reported including noted behavioral differences and alterations in pelt color.

153. Gellman, William: "Projections in the Field of Physical Disability," *Rehabilitation Literature*, 35:2-9, January, 1974.

The current status of rehabilitation for the physically disabled is reviewed. Socioeconomic and rehabilitation trends toward 1980 are considered. Also discussed are projections for 1980, including the need for rehabilitation services in 1980, the goals of rehabilitation then, manpower projections, training, the nature of the work that will be done, and the places that the work will be done. Tables contrast statistics of rehabilitation personnel in 1972 with estimated statistics of rehabilitation personnel in 1980.

154. Gerbie, Melvin V.; Gerbie, Albert B.; and Boehm, John: "Diagnosis of Fetal Maturity by Amniotic Fluid Phospholipids," *American Journal of Obstetrics and Gynecology*, 114:1078-1082, December 15, 1972.

Amniotic fluid samples were obtained and analyzed as described, and the L/S ratio and creatinine level were determined. In the group of patients studied, there were 73 samples with a L/S ratio of >2, three with ratios between 1.75

and 2, seven with ratios between 1.5 and 1.75, and 17 samples had ratios of <1.5. Findings regarding the development of RDS in these infants are reported. A L/S ratio of >1.75 was indicative of fetal pulmonary maturity. "The L/S ratio should be determined in those patients in whom there is doubt of fetal maturity and where elective termination of pregnancy is warranted. Creatinine determination is less helpful in our laboratory because of the wide range of values."

155. Gershanik, Juan J.; Brooks, G. Gary; and Little, Joseph A.: "Blood Lead Values in Pregnant Women and Their Offspring," *American Journal of Obstetrics and Gynecology*, 119:508-511, June 15, 1974.

In this study blood lead values were determined in 381 mothers during labor and 218 neonates (cord blood). Ninety-eight maternal-cord blood pair samples were obtained. Maternal lead values were analyzed according to age, race, and place of residence. No significant difference by age or race was noted, but there was a significantly higher mean blood lead value for the urban group than there was for the rural group. The cord blood data revealed no significant differences when analyzed by birth weight, sex, or race. A high correlation was found between the maternal lead levels and the corresponding neonatal levels. "Thus neonates are born with lead levels comparable to maternal levels."

156. Gibbons, John M., Jr.; Huntley, Thomas E.; and Corral, Angelita G.: "Effect of Maternal Blood Contamination on Amniotic Fluid Analysis," *Obstetrics and Gynecology*, 44:657-660, November, 1974.

In order to evaluate the effect of the addition of small measured amounts of maternal blood to amniotic fluid samples used to determine fetal maturity, described amounts of fresh maternal venous blood were added to amniotic fluid samples, obtained from 20 patients. These samples were then tested for creatinine, osmolality, and lecithin-sphingomyelin ratio. Creatinine and osmolality values were found to change slightly in these contaminated samples, but with increasing amounts of maternal blood added, there was a marked change seen in the lecithin-sphingomyelin ratio. "In each instance, the mean change was in the direction indicating fetal immaturity. It is concluded that a positive or mature result obtained from the analysis of amniotic fluid contaminated with small amounts of maternal blood probably retains its original predictive value. On the other hand, immature negative values from bloody specimens are meaningless, especially in the case of the lecithin-sphingomyelin ratio."

157. Giffei, Jörg Michael, and Saling, Erich: "First Results and Experiences with Our Prematurity and Dysmaturity Prevention Program (PDP-Program)," *Journal of Perinatal Medicine*, 2:45-53, 1974.

This program is based on the PDP list which contains 36 risk factors. Obstetric patients are assessed regarding these factors when first seen and as pregnancy progresses. The 36 factors are divided into two groups: "non-treatable factors or factors of persisting risk after treatment and treatable or removable factors." In the first year of the program all risk factors were given equal validity, but in the second year a point system was used to weigh the factors. When a patient had six or more points, the risk of prematurity sharply rose, and thus these patients were given special PDP care. The same was also true for dysmaturity. Findings obtained over the first two years of the program are reported. In

the second year of the program the incidence of newborns with low birth weight was decreased by 3.6% in the group of cases included in the program as compared with the group of cases not included. This was a reduction of more than 35% in the number of infants with a birth weight of 2500 g. or less. The special care given these cases in the PDP Program is described.

158. Gilbert, Carol: "Wheelchair Insert for Hip and Trunk Support for Children with Cerebral Palsy," *Physical Therapy*, 54:254-255, March, 1974.

Such an insert and its uses are described and pictured. "In working with severely involved cerebral palsied children, wheelchair positioning frequently becomes a problem of paramount importance, especially when spasticity, hip dislocation, scoliosis, and lack of head and trunk control are complicating factors. Our institution has developed a wheelchair insert which has proved to be helpful in meeting these problems and in maintaining the patient in a functional sitting position."

159. Gillham, Bill: "Developing a Language Programme," *Special Education: Future Trends*, 1:17-20, March, 1974.

Described is an experimental program designed to aid young mentally retarded children in the development of language. In the program, individual items in one area are focussed on "(such as number, size, body movement verbs, noun-labels in meaningful groups)." Toys and other materials are then used in the individual sessions to support the language content of the items. Words that are important to the children are used. "The over-all programme is outlined in terms of: (1) concepts and categories; (2) noun-label groups; (3) action-verbs." The criterion for the inclusion of words, the actual teaching sessions, and the emphasis placed on the need for the child to understand the language are among aspects of the program discussed.

160. Gluck, Louis; Kulovich, Marie V.; and Borer, Robert C., Jr.: "Estimates of Fetal Lung Maturity," *Clinics in Perinatology*, 1:125-139, March, 1974.

The procedure used by the authors for determining the lecithin/sphingomyelin ratio is described in detail with accompanying photographs. A modified procedure is also explained.

161. Gluck, Louis; Kulovich, Marie V.; Borer, Robert C., Jr.; and Keidel, Werner N.: "The Interpretation and Significance of the Lecithin/Sphingomyelin Ratio in Amniotic Fluid," *American Journal of Obstetrics and Gynecology*, 120:142-155, September 1, 1974.

"It is the purpose of this report to examine some crucial points about the basis, methods, and significance of the L/S ratio." The methods used in the determination of the L/S ratio from approximately 2,000 amniotic fluid samples are explained, and certain variations in techniques which have been proposed are considered. "Among these, acetone precipitation, phosphorus determination rather than densitometry or area measurement, measurement of total phospholipids rather than the L/S ratio, and determination of lecithin concentration rather than the

L/S ratio are discussed." Also described are the patterns of acceleration of maturation of the fetal lung which have been seen in cases of chronic or acute stress, evidence which indicates a continuity between fetal lungs and the amniotic fluid, and possible sources of error in determining the L/S ratio. Seven conclusions and principles "are presented as a guide in clinical interpretation of the L/S ratio."

162. Gmidt, Gary L.: "Methods of Studying Gait," *Physical Therapy*, 54:13-17, January, 1974.

The approaches for studying gait are categorized into four methods: observation, a holistic approach, the segmental method, and the comprehensive method. Each method is considered individually, and "key contributions from a historical perspective, recent developments in the study of gait, and selected results from formal studies are presented for each category."

163. Goddard, P.; Keith, I.; Marcovitch, H.; Roberton, N.R.C.; Rolfe, P.; and Scopes, J.W.: "Use of a Continuously Recording Intravascular Oxygen Electrode in the Newborn," *Archives of Disease in Childhood*, 49:853-860, November, 1974.

Such a system and its usage is described. "The electrode, based on the Galvanic principle, is built into the tip of a French Guage (FG) 5 umbilical arterial catheter." The cell construction, operation, and calibration are explained as are in vivo experiments on rabbits. Experience gained in using the system in the management of eight newborn infants is described in detail. "Its use has considerably improved the management of oxygen therapy in the seriously ill premature newborn infant and has done so with at least a 50% reduction in the amount of blood needed to be removed for gas analysis."

164. Goldman, Herbert I.; Goldman, Joan S.; Kaufman, Ira; and Liebman, O. Bernard: "Late Effects of Early Dietary Protein Intake on Low-Birth-Weight Infants," *Journal of Pediatrics*, 85:764-769, December, 1974.

A total of 304 infants, who weighed less than 2,000 gm. at birth, had been randomly assigned to either a 2% or a 4% protein diet in the premature nursery as explained. These children were then recalled for follow-up evaluation at age three years and at 5-7 years of age to determine if there were any late effects of early dietary protein intake. "The incidence of medical, surgical, and neurologic sequelae was approximately equal in both diet groups. However, in the group which had received the 4% protein diet, a significantly increased incidence of low IQ scores was found in infants of birth weight below 1,300 gm. and a significantly increased incidence of strabismus in infants of birth weight below 1,700 gm. These data suggest that intakes of cow's milk protein in excess of 6 gm/kg/day should not be used for low-birth-weight infants."

165. Goldstein, Arnold S.; Fukunaga, Keiko; Malachowski, Natalie; and Johnson, John D.: "A Comparison of the Lecithin/Sphingomyelin Ratio and Shake Test for Estimating Fetal Pulmonary Maturity," *American Journal of Obstetrics and Gynecology*, 118: 1132-1135, April 15, 1974.

The lecithin/sphingomyelin (L/S) ratio and the foam stability or shake test were performed as described on 212 amniotic fluid specimens, and findings were correlated with the clinical outcome of the infants. Agreement between the two methods was noted in 59.4% of the samples; however, 34% of the shake test findings demonstrated less maturity than the L/S ratio and only 6.6% of the samples showed more maturity. "When delivery of the fetus occurred within 72 hours following amniocentesis, respiratory distress syndrome (RDS) developed in 36 per cent of the patients in whom the L/S ratio was less than 2.0 but in only 12 per cent of the patients when the shake test was transitional or immature." Implications are discussed, and conclusions are presented. "From our experience, the shake test can be used as a valuable screening procedure. A positive shake test has not been associated with the development of RDS in the infant and a 20 second shake gives only 1.5 per cent false positive results compared to the L/S ratio. However, a shake test read as immature or transitional, overestimates the risk of developing RDS and should be checked by determining the L/S ratio."

166. Goldstein, Gary W.; Asbury, Arthur K.; and Diamond, Ivan: "Pathogenesis of Lead Encephalopathy," *Archives of Neurology*, 31:382-389, December, 1974.

Experiments were conducted on immature rats as described. Findings are presented with regard to studies in which Lead 210 was injected into young rats and also studies in which nonradioactive lead was added to the diet of nursing rat mothers. "Lead 210 readily enters the brain after intravenous injection; uptake is proportional to dose. Although blood levels fall rapidly after injection, brain lead retention is prolonged and unaffected by edetic acid therapy. In individuals who ingest lead episodically, progressive accumulation in the brain can occur without detection of changes in the blood." "Excessive lead deposition in the brain of nursing rat pups provokes severe hemorrhagic reactions limited to the cerebellum although lead concentrations are the same as in other brain regions. A pre-hemorrhagic stage of lead encephalopathy could be identified in the cerebellum by monitoring brain edema. This appears to be due to capillary dysfunction and suggests that cerebellar capillaries are more vulnerable to lead than capillaries elsewhere in the brain." These findings are linked to those encountered in children with lead poisoning.

167. Golub, Mari, and Kornetsky, Conan: "Seizure Susceptibility and Avoidance Conditioning in Adult Rats Treated Prenatally with Chlorpromazine," *Developmental Psychobiology*, 7:79-88, January, 1974.

Seizure susceptibility and shock avoidance learning were tested as described in the offspring of female rats who had been treated early in gestation with either saline or chlorpromazine (CPZ). Cross fostering was conducted at birth so that half of the saline litters and half of the CPZ litters were transferred to foster mothers while the others remained with their natural mothers. "Fostering procedures permitted separation of prenatal influences from postnatal rearing influences of drug treatment. Offspring of drug-treated mothers had higher

avoidance scores, higher intertrial activity levels, and greater seizure susceptibility than offspring of controls. Animals reared by previously treated mothers also had higher avoidance and greater seizure susceptibility. This postnatal effect depended on sex and was not accompanied by an overall increase in intertrial activity. Rearing by a previously drug-treated mother was also found to modify the influence of neonatal stress on adult avoidance learning."

168. Goodlin, Robert C., and Lowe, Ernest W.: "Multiphasic Fetal Monitoring," *American Journal of Obstetrics and Gynecology*, 119:341-357, June 1, 1974.

Some 13 biophysical techniques were evaluated for their usefullness in assessing fetal health and development. These methods, which included antenatal techniques, are described, and results are presented. "Fetal response to sound, systolic time intervals, arterial pulse propagation, and recording of fetal activity patterns were found to be the most promising and further discussion is conducted by Drs. Jimmie A. Westberg, Tom Kirschbaum, and Goodlin.

169. Goodrick, Charles L.: "The Effect of Protein Malnourishment and Caging on Growth and Behavior of Laboratory Mice," *Developmental Psychobiology*, 7:249-256, May, 1974.

At five weeks of age, described inbred and hybrid mice were weighed, placed on either a low-protein or a normal-protein diet, and caged either one, two, or five mice per cage. At age 15 weeks, 12 mice from each group were tested in one trial as described for forced and free exploration and for emotionality. Methods of data analysis are explained. "For all groups body weights of mice fed normal protein diets were greater for group-caged than for isolated mice, and body weights of mice fed low-protein diets were less for group-caged than for isolated mice. At 15 and 16 weeks of age, mice fed low-protein diets engaged in more exploratory behavior and were less emotional than mice fed normal-protein diets. Mice that were group-caged engaged in less exploration and were more emotional than isolated mice. In addition to the major effects of caging and diet on behavior, mode of inheritance was significantly modified."

170. Gordon, Myron; Rich, Herbert; Deutschberger, Jerome; and Green, Marvin: "The Immediate and Long-Term Outcome of Obstetric Birth Trauma. I. Brachial Plexus Paralysis," *American Journal of Obstetrics and Gynecology*, 117:51-56, September 1, 1973.

Studied were 59 cases of neonatal brachial paralysis who were participating in the Collaborative Perinatal Study. Findings are presented regarding obstetric and pediatric factors in these cases, the course of the paralyses, and the results of psychological tests made on the children. Adverse obstetric factors were common in this group and "included large fetal size, dysfunctional and dystocic labor, abnormal presentations, and evidence of fetal distress." Among the pediatric factors noted were the frequent presence of neonatal asphyxia, the need for resuscitation, and low Apgar scores. "Paralysis was transitory in 56 infants. In the vast majority of cases, there was no evidence of long-term effects of the perinatal injury and asphyxia as judged by the results of neurological examinations at one year or by psychological test scores at 8 months and at 4 years."

171. Gordon, Neil, and Grimley, Ann: "Clumsiness and Perceptuo-Motor Disorders in Children," *Physiotherapy*, 60:311-314, October, 1974.

The various disorders often included within the term "clumsy children" are considered. Assessment of clumsiness, helping the clumsy child, physiotherapy techniques to be used, and the prevention and causes of clumsiness are discussed. There are two tables included: Table 1 is an exercise chart adapted from a form given to parents at the Manchester Children's Hospital. Table 2 consists of suggestions for developing eye/hand coordination, fine motor coordination, and tactile discrimination.

172. Gorelick, Molly C.: "Are Preschools Willing to Integrate Children with Handicaps?" *Journal of Rehabilitation*, 40:17-18, July-August, 1974.

Described are the methods and results of a survey made of preschools in the Northwest District of Los Angeles County to assess their willingness to enroll handicapped children in their schools. A questionnaire was sent to 230 schools, and 72 questionnaires were returned of which 60 (83%) indicated they were "willing to accept referrals of children with handicaps now." In a chart are listed specific handicaps and the number of answering schools willing to accept children with those handicaps. "More extensive surveys of this type should be mounted in all communities and provisions should be made for updating the data so that appropriate placements can be made for individual children. The resources offered by schools participating in this survey have been published and made available to the various agencies in the community. The enthusiastic response has been most gratifying and underscores the need for such directories."

173. Gould, S.R.; Mountrose, U.; Brown, D.J.; Whitehouse, W.L.; and Barnardo, D.E.: "Influence of Previous Oral Contraception and Maternal Oxytocin Infusion on Neonatal Jaundice," *British Medical Journal*, 3:228-230, July 27, 1974.

When serum bilirubin levels were measured in the cord blood at birth and in blood obtained on the sixth day of life in 181 infants, no evidence was found "to suggest that previous maternal oral contraception, maternal oxytocin infusion, epidural anaesthesia, or breastfeeding are factors influencing neonatal jaundice."

174. Green, H. Gordon: "Infants of Alcoholic Mothers," *American Journal of Obstetrics and Gynecology*, 118:713-716, March 1, 1974.

Animal and human studies concerned with the effects of long-term maternal ingestion of ethanol on the offspring are historically reviewed. The problem of the influence of other variables, such as socioeconomic and nutritional factors, on the findings in such studies is considered.

175. Griffin, Judy W.: "Use of Proprioceptive Stimuli in Therapeutic Exercise," *Physical Therapy*, 54:1072-1079, October, 1974.

The four major categories of procedures used by physical therapists to aid in the facilitation or inhibition of motor responses are listed. One of these is the use of "proprioceptive stimuli, such as stretch, resistance, and vibration."

These various proprioceptive stimuli are individually considered with regard to the ways in which they are clinically used by physical therapists and when possible, the reasons for their use. "The need for clinical research projects assessing the effectiveness of these and other neurophysiological therapeutic procedures is emphasized."

176. Griffiths, A.D., and Laurence, K.M.: "The Effect of Hypoxia and Hypoglycaemia on the Brain of the Newborn Human Infant," *Developmental Medicine and Child Neurology*, 16:308-319, June, 1974.

Studied and compared histologically were brain sections from 17 infants who died after experiencing an episode of clinical hypoxia in the perinatal period and 17 infants who died after such an episode but also had hypoglycemia. Clinical features of these 34 infants are presented with comparison made between the two groups. Cell changes are described for both groups with examples pictured. "It appears that in infants who suffer hypoxia in the newborn period, exposure to a limited degree of hypoglycaemia produces no histological evidence of central nervous system damage over and above the produced hypoxia."

177. Griffiths, E.R.: "Growth Problems in Cervical Injuries," *Paraplegia*, 11:277-289, February, 1974.

The problems of continuing growth in children with injury to the vertebral column are considered. A case is presented to illustrate the deterioration possible in such growing adolescents. Several other cases are presented to illustrate the benefits of surgical intervention. Further discussion is conducted following the article by Dr. Terence McSweeney and others. Numerous pictures of x-rays are included.

178. Griscom, N. Thorne: "Possible Radiologic Approaches to Fetal Diagnosis and Therapy," *Clinics in Perinatology*, 1:435-464, September, 1974.

Such approaches are discussed and illustrated under the following subheads: "fetal disorders causing tissue destruction or failure of normal tissue growth," "conditions tolerated in utero but serious or fatal at birth," "conditions in which interruption of pregnancy might be considered," and "prenatal diagnosis to assist in management of delivery."

179. Grunnet, Margaret L.; Curless, Richard G.; Bray, Patrick F.; and Jung, August L.: "Brain Changes in Newborns from an Intensive Care Unit," *Developmental Medicine and Child Neurology*, 16:320-328, June, 1974.

The brains of 105 infants with respiratory distress who failed to survive after treatment in an intensive care unit were studied. The infants were divided as described into a "pre-term" group (82 infants) and a "term" group (23 infants). The four major types of pathological change seen in the central nervous system of these cases are explained. Results indicated "that 63 of the pre-term infants died as a result of subependymal germinal plate hemorrhage." "The clinical course of 25 of the 105 infants was studied intensively. In these infants

the severity of the lesions appeared to correlate roughly with the length of survival under anoxic and acidotic conditions. The data indicate the importance of determining the fundamental etiology of the germinal plate hemorrhage, of searching for new therapeutic approaches to attack this problem, and of planning follow-up studies of those infants who survive."

180. Gutelius, Margaret F.; Kirsch, Arthur D.; MacDonald, Sally; Brooks, Marion R.; McErlean, Toby; and Newcomb, Carol: "Promising Results From a Cognitive Stimulation Program in Infancy," *Clinical Pediatrics*, 11:585-593, October, 1972.

Five other studies of this nature are briefly mentioned. Then explained is the Mobile Unit for Child Health Supervision Program which was begun in 1965 in Washington, D.C. Intensive well baby care was administered to disadvantaged babies through the first three years of life. In addition to this care the plan includes "a program for sensory, motor and cognitive stimulation, with emphasis on language development." The study series included 92 first-born black infants of whom 46 were placed in an experimental group and 46 acted as controls. These infants and their mothers are described as are the intervention program, the stimulation program, and methods used to evaluate the program. Comparative findings between the experimental and control babies are presented in detail, results are discussed, and speculation is offered on "What aspects of our program contributed the most to its success in helping mothers to raise brighter and more competent children?" Findings are summarized. Among them was the fact that "by 3 years of age on the Stanford-Binet Intelligence Test, the mean IQ for the experimental group was 99.2 - significantly greater at the 0.1 per cent level than the mean IQ of 91.3 for the control group." "In conclusion, we believe that the success of this stimulation program is produced in large part from an increased feeling of personal worth and self-confidence built up in the mothers, with resulting changes in the mother-child relationship."

181. Haeri, A.D.; South, Joanna; and Naldrett, Janet: "A Scoring System for Identifying Pregnant Patients with a High Risk of Perinatal Mortality," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:535-538, July, 1974.

Such a numerical scoring system is described which is based on findings upon taking the patient's history and on examination at booking. This system would be used to identify high risk patients who would require extra care.

182. Hall, Philip W., III, and Roux, Jacques F.: "Amniotic Fluid Beta-2 Microglobulin Concentration - An Index of Gestational Age," *American Journal of Obstetrics and Gynecology*, 120:56-59, September 1, 1974.

Amniotic fluid samples were obtained at various periods of gestation from 20 women, and beta-2 microglobulin concentrations were determined. Results indicated a rapid decrease in the concentration of beta-2 microglobulin after the 36th week of pregnancy. Possible explanations for this decrease are offered, and it is suggested "that this test may have significance in determining fetal age."

183. Hankin, Lester; Heichel, Gary H.; and Botsford, Richard A.: "Lead on Wrappers of Specialty Foods as a Potential Hazard for Children," *Clinical Pediatrics*, 13: 1064-1065, December, 1974.

The lead content of printed paper wrappers used in the packaging of products such as confections, lollypops, and chewing gum, which are marketed primarily for children was tested as described. "The lead content of the colored portions of wrappers around some specialty foods tested ranged from 8 to 10,100 ppm. The highest concentration of lead was found in a bakery confection wrapper." This evidence is seen as being potentially harmful to children.

184. Hanks, Susan B.: "Trailer Adaptations for the Wheelchair User," *Physical Therapy*, 54:1201-1202, November, 1974.

Inexpensive adaptations that can be made to a standard recreational trailer are described and pictured.

185. Harding, P.G.R.: "Biochemical-Enzymatic Indices of the Fetal Environment," *Clinics in Perinatology*, 1:73-80, March, 1974.

The properties and regulation of enzymes are reviewed, and enzyme activity in the fetus is considered. Three biochemical processes that are currently being investigated for their significance in reflecting fetal status and the environment of the fetus are described. These are: "1) The capacity to synthesize steroids, especially estrogen by the feto-placental unit. 2) The synthesis of the phospholipid compounds in the fetal lung constituting pulmonary surfactant and in the fetal brain as myelin. 3) The mobilization of energy reserves by the fetus in response to an adequate glucose substrate."

186. Hardy, James H., ed. *Spinal Deformity in Neurological and Muscular Disorders.* St. Louis, Missouri: C.V. Mosby, 1974. 262 pp.

This book, containing 12 chapters written by contributors, is designed to provide a background of the many problems involved in the treatment of patients with spinal deformities associated with neurological and muscular disorders. The neurological evaluation of such patients and anesthetic problems with patients having spinal deformities are considered in separate chapters. "The more common neurological and muscular disorders associated with spinal deformities are discussed in depth, with illustrative case studies. The less common entities are mentioned briefly, but a basic analysis and rational approach to their treatment is outlined." "Cerebral Palsy and Scoliosis" is the title of Chapter 9 written by G. Dean MacEwen. There are numerous photographs and bibliographies and an index.

187. Hardy, Janet B., and Mellits, E. David: "Does Maternal Smoking During Pregnancy Have a Long-Term Effect on the Child?" *Lancet*, 2:1332-1336, December 23, 1972.

Previous research in this area is reviewed. Using the population of the John Hopkins child development study, the author studied the possible long-term adverse effects of maternal smoking on the physical and intellectual development of the child. This study population and the design of the matched-pair study are described. Results are presented regarding the infants at birth and the anthropometric observations, body length, head circumference, neurological status, and psychological observations of the children at ages one, four, and seven years. "The babies of smokers showed significant intrauterine growth retardation. They were 250 g. lighter and shorter at birth than the babies of non-smokers; they were still shorter at one year. At four and seven years there was no significant difference in either physical measurements or intellectual functioning." These findings and others in the study are discussed.

188. Harris, Fredric A.; Spelman, Francis A.; and Hymer, John W.: "Electronic Sensory Aids as Treatment for Cerebral-Palsied Children. Inappropriception: Part II," *Physical Therapy*, 54:354-365, April, 1974.

A treatment program for use with children having athetoid cerebral palsy is presented in which electronic sensory aids are employed "to improve kinesthetic monitoring of the head and limbs." The theory upon which this program is based is discussed in relation to the concept of inappropriception. The head control device (HCD) and the limb position monitor (LPM) are described along with the therapeutic activities to be used with the HCD and the LPM. Findings are presented on 18 athetoid children, ages seven to 18 years, of whom eight used the LPM, nine used the HCD, and one child used both devices. "The sample records and graphs are objective evidence that the approach advocated (i.e., improving sensory feedback) is effective for treatment of cerebral palsy. Postural stability and quality of movements can be improved by using electronic exteroceptive substitutes to supplant defective proprioceptive monitoring of body parts." Findings are discussed and further endeavors are described.

189. Harris, R.; Jennison, R.F.; Barson, A.J.; Laurence, K.M.; Ruoslahti, E.; and Seppälä, M.: "Comparison of Amniotic-Fluid and Maternal Serum Alpha-Fetoprotein Levels in the Early Antenatal Diagnosis of Spina Bifida and Anencephaly," *Lancet*, 1:429-433, March 16, 1974.

Amniotic fluid and/or maternal serum samples were obtained, and alpha fetoprotein levels were determined and compared in five listed groups of patients, including those having a history of previous spina bifida or anencephalic infants. Findings are summarized, and two cases are presented. "It is concluded that when ultrasound and amniocentesis are used most fetuses with anencephaly and open spina bifida are detectable before 20 weeks of gestation allowing selective abortion of most cases with neurological involvement when there is a history of previous affected fetuses. Closed lesions will usually be missed, and maternal serum-A.F.P. assay cannot be relied upon to detect neural-tube malformations in early pregnancy, whether open or closed."

190. Harris, Robert E.: "Viral Teratogenesis: A Review with Experimental and Clinical Perspectives," *American Journal of Obstetrics and Gynecology*, 119:996-1008, August 1, 1974.

The mechanisms of viral teratogenesis are considered and five guidelines are presented "to experimentally classify a virus as a teratogen." These guidelines, however, cannot be followed on humans. Then reviewed are the proven and the suspected human viral teratogens. Rubella and cytomegalovirus are considered the "proved human viral teratogens," while herpesvirus hominis type 2, western equine encephalomyelitis, Venezuelan equine encephalomyelitis, poliovirus, Coxsackie B virus, influenza, mumps, varicella, smallpox, hepatitus virus, and lymphocytic choriomeningitis are considered under the heading of "suspected human viral teratogens." "Clinical guidelines are proposed to assist the physician in determining whether or not a virus is a teratogen."

191. Harrison, V.C.; Peat, G.; and Hesse, H. de V.: "Fetal Growth in Relation to Histamine Concentration in Urine," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:686-690, September, 1974.

Studied with regard to the excretion of free histamine in their urine were 225 women having normal pregnancies and 20 women who displayed evidence of intrauterine growth retardation. Mean values of the concentration of histamine in the urine at various stages of pregnancy in these two groups are reported. "The rate of excretion was found to be helpful in the assessment of fetal lung maturation in late pregnancy. When the excretion rate exceeded 100 μg./24 hours the fetus was likely to be immature, growing adequately and standing a chance of developing hyaline membrane disease if delivered at this stage. When persistently low rates of histamine excretion were recorded, the fetus had either reached the stage of normal full term development or was growth retarded. In either case the lungs of such a fetus were likely to be mature." Findings are discussed.

192. Haskin, Myra R.; Erdman, William J., II; Bream, Jennifer; and MacAvoy, Charles G.: "Therapeutic Horseback Riding for the Handicapped," *Archives of Physical Medicine and Rehabilitation*, 55:473-474, October, 1974.

The Horsemanship Program for handicapped children at the Hospital of the University of Pennsylvania is described. In this program children with cerebral palsy, mental retardation or meningomyelocele have been treated. The exercises included in the program are listed, and the requirements and benefits of the program are discussed. Two brief case reports are included.

193. Haslam, Robert H.A.; Walcher, J. Ronald; Lietman, Paul S.; Kallman, Clayton H.; and Mellits, E. David: "Dantrolene Sodium in Children with Spasticity," *Archives of Physical Medicine and Rehabilitation*, 55:384-388, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Dantrolene sodium was administered to "23 children with spasticity related to brain damage incurred at birth" in a double-blind crossover study to determine the usefulness of the drug in such cases. The age range of the children was from 1 1/2 to 17 years, and their IQs ranged from 10 to 80. All children were thoroughly examined previous to the study. There were four described categories of testing during the study: neurologic, nursing, physical therapy, and occupational therapy. Statistical methods are explained. Findings "showed that dantrolene sodium produced improvement in all neurologic measures tested except clonus, with statistically significant values in reflexes and 'scissoring.' Significant improvement was demonstrated in self-help skills. No important side effects or drug reactions were observed."

194. Hayes, Kathleen: "Prenatal Viral Infection with Particular Reference to Cytomegaloviruses," *Australian Paediatric Journal*, 10:56-63, April, 1974.

The "known significance of prenatal infection" is considered with the importance of cord serum IgM levels and the contribution of prenatal viral infections to prematurity, dysmaturity, and congenital abnormalities discussed. Special consideration is given to "the CMV problem," and a recent report of a CMV vaccine is noted. Many studies are mentioned throughout.

195. Heal, Laird W.: "Evaluation of an Integrated Approach to the Management of Cerebral Palsy," *Exceptional Children*, 40:452-453, March, 1974.

Described is the Integrated Management of Cerebral Palsy (IMCP) Project which was designed to evaluate the methods of conductive education developed at the State Institute for the Conductive Education of the Motor Disabled in Budapest. A group of cerebral palsied children were trained in a 13 1/2 hour per day described program that "stressed the development of functional movements, socialization, and academic skills." This integrated program was compared to three conventional training programs. "The results of periodic evaluations indicated that the conventionally trained children had higher initial scores on the functional movement variables and registered significantly greater gains on several of them. The IMCP children evidenced some regression on these measures. By contrast, on the socialization variables the IMCP children were

comparable to the conventionally trained children on their initial scores and registered significantly greater gains on two of the seven measures. Finally, on cognitive measures the conventionally trained children had higher initial scores, but both groups made comparable gains. Because of unique IMCP program components, these results were taken to apply to the IMCP Project in particular and not necessarily to conductive education generally."

196. Heggarty, Hugh, and Wright, Trevor: "Tetrabenazine in Athetoid Cerebral Palsy," *Developmental Medicine and Child Neurology*, 16:137-142, April, 1974.

The drug, tetrabenazine is described. A double-blind, cross-over study was conducted for seven weeks on 30 athetoid patients, ages three to 19 years. The drug schedule is presented. The patients were initially assessed at week 0 and then at described times throughout the study on tests of hand function, analysis of hand writing or typing, and the subjective opinion of parents, teachers, and patients as to activities of daily living. "Statistically significant improvement occurred in hand-function tests while patients were receiving this drug, but the results must be interpreted with caution because the over-all clinical improvement was minimal. Tetrabenazine appeared to improve the standard and speed of handwriting or typing in 10 out of 15 patients, and there was improvement in the activities of daily living in 16 out of 28." Side-effects are discussed with drowsiness being the most common in occurrence.

197. Heiskanen, O., and Kasfe, M.: "Late Prognosis of Severe Brain Injury in Children," *Developmental Medicine and Child Neurology*, 16:11-14, February, 1974.

Followed were 36 children under age 16 years who had received a head injury and who, as a result, had been unconscious for more than 24 hours. These children were assessed as to their school performance, neurological deficit, and the development of epilepsy. "Eight of the 34 school-age children have been unable to attend normal schools since the injury, and the school performance of nine others has been below their pre-traumatic levels." "Twelve children still had a hemiparesis, 10 of whom also had a marked decline in intellectual capacity. Five patients had developed late epilepsy."

198. Heisler, Verda: "Dynamic Group Psychotherapy with Parents of Cerebral Palsied Children," *Rehabilitation Literature*, 35:329-330, November, 1974.

Described is the study made by the author and supported by grants from the United Cerebral Palsy Research and Educational Foundation, Inc., concerning "The Applicability of Principles of Dynamic Group Psychotherapy to the Adjustment Problems of Parents of Children with Cerebral Palsy." A therapy group of parents of cerebral palsied children met for 66 2-hour sessions, held once a week. The author also discussed "the meaning and significance of such therapeutic work."

199. Hems, D.A.: "Palpable Regular Jerking Movements of the Human Fetus: A Possible Respiratory Sign of Fetal Distress," *Biology of the Neonate*, 23:223-230, 1973.

In a study of the occurrence of regular fetal jerking movements (RFJM) in expectant mothers, about 8% (26) of the group studied were detected, either by palpation or from their histories, to have had such movements. These cases and the characteristics of the RFJM are described. The movements occurred during the last two months of pregnancy or during labor with the episodes lasting from 0.5 to 15 minutes. Additional characteristics are listed. Further analysis of these cases and their outcomes suggested that RFJM may be respiratory signs of fetal distress. They may be likened to fetal "gasping."

200. Heringová, A., and Jirsová, V.: "The Influence of Phenobarbitone on Bilirubin Clearance," *Biology of the Neonate*, 23:325-329, 1973.

Bilirubin clearance was studied in ten full term and ten premature infants who received phenobarbitone treatment, and in ten full term and ten premature control infants who did not receive the drug. The mothers of the full term infants received the phenobarbitone 7-14 days before delivery as described, and the ten premature infants received the phenobarbitone beginning at the 6th hour of life for four days as described. Findings indicated that there was "a significant increase in bilirubin clearance" in the treated full term and premature infants. "In premature infants the rate of bilirubin clearance was so enhanced on the 5th day that it almost equalled that of term infants." "Our results suggest that even though definitive evidence of the way phenobarbitone affects man is still lacking, prophylactic administration of phenobarbitone seems to be indicated in premature infants who may suffer from irreversible brain damage as a result of hyperbilirubinaemia."

201. Heringová, A.; Jirsová, V.; and Poláček, K.: "Bilirubin Clearance in Healthy and Pathological Newborns," *Biology of the Neonate*, 21:303-308, 1972.

In order to study the excretion of bilirubin from serum, bilirubin was administered as described, after initial levels had been established, on the first and fifth days of life to the following infants: ten healthy full-term neonates, ten premature neonates, ten hypotrophic neonates, and ten neonates of diabetic mothers. "It was found that on the first day of life, only 65% of the administered bilirubin was excreted in all groups. On the fifth day, full-term newborns, including hypotrophic infants and infants of diabetic mothers, were able to excrete all the administered bilirubin already, within 60 min. In premature infants, however, the disappearance of bilirubin from blood was as slow as it was on the first day." These results are discussed.

202. Herman, Richard; Freedman, William; and Mayer, Nathaniel: "Neurophysiologic Mechanisms of Hemiplegic and Paraplegic Spasticity: Implications for Therapy," *Archives of Physical Medicine and Rehabilitation*, 55:338-343, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Such mechanisms were investigated in a reported study of the dynamic and static properties of the ankle myotatic reflex in hemiplegic and paraplegic patients. These properties were "tested by observing the electromyographic (EMG) activity and ankle torque caused by imposed ramp movements,

slow sinusoidal movements, or vibration applied to the Achilles tendon." Also discussed is the pharmacologic management of spasticity. It is felt that the ideal drug for management has not yet been found. The actions of dantrolene sodium and diazepam in spastic patients was studied and compared. "Enhanced motor discharges to muscle may induce extremely high degrees of muscle tension, and our studies showed that diazepam, like other centrally acting agents, failed to alter the reflexes during the rapid repetitive stretch of muscle. Dantrolene sodium, however, exerted pronounced effects on reflex tension with concomitant improved function in most of the patients treated."

203. Hertzman, Carl A.: "Use of Plastazote™ in Foot Disabilities," *American Journal of Physical Medicine*, 52:289-303, December, 1973.

The properties of Plastazote are described. It "is a foamed polyethylene material which is finding increasing usage for various orthotic functions including shoe inserts." Use of Plastazote by the shoe clinic team at the Cincinnati Veterans Administration Hospital is then discussed, including the classes of patients benefiting from the use of Plastazote and the technique used to fit Plastazote. It has been used successfully in patients whose primary complaint is pain; in those patients having trophic, including diabetic, ulcers; and in patients with disabled feet. Numerous case reports are presented with pictures to illustrate those types of patients benefiting from Plastazote.

204. Heubusch, Louise M: "Lightweight Inexpensive Dressing Hook," *Physical Therapy*, 54:1202, November, 1974.

Described and pictured are the use and the components of such a hook, to be used by "patients with permanent or temporary loss of functional range of motion and strength in the hips and upper extremities" to aid in dressing. Also listed are the steps in construction.

205. Higa, Yumi; Sasazuki, Takehiko; Nakajima, Hiroshi; Takayama, Masaomi; Tada, Masaki; and Soma, Hiroaki: "Amniotic Fluid Proteins in the Antenatal Diagnosis of Some Fetal Abnormalities," *American Journal of Obstetrics and Gynecology*, 119:932-938, August 1, 1974.

"This study has been performed in an attempt to find marker protein molecules in amniotic fluid or maternal serum which would indicate fetuses with certain abnormalities." Amniotic fluid samples were obtained from two groups of patients. One group contained 27 women between ten and 21 weeks gestation and having high-risk pregnancies, two of whom were diagnosed as having pregnancies leading to Down's syndrome. The second group consisted of 67 women between 22 to 45 weeks gestation of whom eight were diagnosed as having pregnancies leading to anencephaly and five indicated intrauterine fetal death. Total amniotic fluid protein concentrations were determined as well as 19 protein components reactive to antihuman serum antesera, and a-fetoprotein values in the amniotic fluid and maternal serum. Among the findings was the fact that a-fetoprotein in maternal serum showed a significant increase in anencephaly and intrauterine fetal death, "offering the possibility of antenatal diagnoses of other fetal distress through the monitoring of a-fetoprotein levels in maternal serum."

206. Hilderbrand, David C.; Fahim, Zuhal; James, Elizabeth; and Fahim, Mostafa: "Ceruloplasmin and Alkaline Phosphatase Levels in Cord Serum of Term, Preterm, and Physiologically Jaundiced Neonates," *American Journal of Obstetrics and Gynecology*, 118:950-954, April 1, 1974.

The properties of ceruloplasmin and alkaline phosphatase are described. Cord blood samples were obtained from normal and preterm neonates, and ceruloplasmin and alkaline phosphatase levels were determined as described. Results are reported regarding the levels found in the term, the preterm, and the jaundiced neonates. The following conclusions are presented: "Ceruloplasmin levels in cord serum are significantly lower in preterm than in term neonates and significantly lower in neonates who develop clinical physiological jaundice than in normal neonates. Further, hepatic function with respect to ceruloplasmin synthesis appears to be more immature in infants who become jaundiced than would be indicated by gestational age alone. This indicates that immaturity of hepatic activity is not limited to glucuronyl transferase synthesis. The possibility of predicting the development of physiological jaundice by cord levels of ceruloplasmin appears promising but gestational age of the neonate must be taken into consideration in addition to ceruloplasmin levels. No change in heat sensitive alkaline phosphatase levels in cord serum with gestational age of the neonate was observed. Heat stable alkaline phosphatase was not found in cord blood."

207. Hill, Reba M.; Verniaud, Willie M.; Horning, Marjorie G.; McCulley, Lee B.; and Morgan, Naoma F.: "Infants Exposed in Utero to Antiepileptic Drugs," *American Journal of Diseases of Children*, 127:645-653, May, 1974.

Studied and followed from birth to age 36 months were 28 infants whose mothers had required anticonvulsant drugs during pregnancy and 165 cohort infants who were not exposed to such drugs. The two groups and their families were compared regarding many factors. The children received regular detailed physical examinations and Gesell developmental evaluations as described. "A clustering of physical findings observed in the infants exposed to anticonvulsant agents makes these infants an identifiable population among neonates. Disfiguring or life-threatening malformations occurred more frequently in these infants, as did failure to thrive and Gesell developmental quotients of less than 90 at 21 months of age or greater."

208. Hinkel, G.K.; Kintzel, H.W.; Schwarze, R.; and Händel, A.: "An Enzyme Inductor Combination for the Prevention of Hyperbilirubinemia in Premature Infants," *Acta Paediatrica Scandinavica*, 63:393-397, May, 1974.

In this reported study, phenobarbital and nicethamide were administered prophylactically to premature infants as an enzyme inductor combination to aid in the prevention of hyperbilirubinemia. A total of five groups of premature newborns were studied. Group 1 received phenobarbital alone while Groups 2 through 5 received phenobarbital in combination with nicethamide in varying doses. The combination was found to have a cumulative effect and thus be superior to the administration of phenobarbital alone. No exchange transfusions were necessary in the infants receiving the combination treatment. The most favorable dosage was "phenobarbital, 10 mg/kg body weight pro die from day 1 to day 3 (after birth), combined with nicethamide, 100 mg/kg per diem from day 1 to day 4."

209. Hobbins, John C.; Goldstein, Leon; and Fofschild, Joyce: "Value of HCS Determinations in Management of Prolonged Pregnancy," *Obstetrics and Gynecology*, 44: 802-805, December, 1974.

In order to find better ways to diagnose post-maturity, several hormonal assays were performed on blood samples obtained from 46 women in their 42nd to 45th weeks of pregnancy. Methods used to determine the human chorionic somatomammotropin (HCS) levels in these samples are described. Criteria by which the infants from these pregnancies were judged as being postmature are listed. "Eleven patients delivered babies with postmaturity syndrome, 28 babies exhibited no signs of postmaturity, and 7 babies had 'slight' postmaturity syndrome." Of the hormonal assays conducted, only HCS levels were found to be "statistically correlated with the presence or absence of postmaturity syndrome. It appears that HCS levels may be a very important adjunct in the management of suspected postmaturity syndrome."

210. Hobbins, John C.; Mahoney, Maurice J.; and Goldstein, Leon A.: "New Method of Intrauterine Evaluation by the Combined Use of Fetoscopy and Ultrasound," *American Journal of Obstetrics and Gynecology*, 118:1069-1072, April 15, 1974.

Studied by "a technique combining the localizing abilities of ultrasound and the viewing capabilities of a new small-diameter fetoscope" were 28 obstetric patients who were between 15 to 20 weeks of gestation and who were to have therapeutic abortions. In 27 of these cases intra-amniotic entry and visualization of fetal parts were successful. The diagnostic benefits of this technique are discussed and its possible advantages are listed.

211. Hobel, Calvin J.; Hyvarinen, Marcia A.; Okada, Donald M.; and Oh, William: "Prenatal and Intrapartum High-Risk Screening. I. Prediction of the High-Risk Neonate," *American Journal of Obstetrics and Gynecology*, 117:1-9, September 1, 1973.

Described is a screening technique that enables the prediction of perinatal morbidity and mortality. Prenatal, intrapartum, and neonatal factors were analyzed in 725 women and their 738 neonates. These factors were assigned values and total scores were computed to identify low-risk and high-risk patients. These prenatal, intrapartum, and neonatal factors are listed in three tables. Using this scoring system, four groups of patients were formed and are described. The 346 patients who were considered to be at low risk during both the prenatal and intrapartum periods had a very low incidence of perinatal mortality and high-risk neonates. This was also true to a lesser extent of the 135 patients who were considered to be at high risk during the prenatal period but at low risk during the intrapartum period. There was, however, a significant increase in perinatal mortality and the number of high-risk neonates in the 144 women who were considered to be at high risk only during the intrapartum period and in the 119 women who were considered to be at high risk during both the prenatal and intrapartum periods.

212. Hoffer, M. Mark; Garrett, Alice; Koffman, Martin; Guilford, Arthur; Noble, Roy; and Rodon, Guy: "New Concepts in Orthotics for Cerebral Palsy," *Clinical Orthopaedics and Related Research*, 99:100-107, July-August, 1974.

Recent modifications in orthoses are described. Six factors are discussed which are to be considered in cerebral palsy for orthotics. These are the type of cerebral palsy, the geographic description of the patient's disability, the patient's reflex levels, the individual limb examination of the patient, the patient's ability to communicate and the patient's cognitive ability. Orthoses for ambulation are then considered including "orthoses for balance in ambulation," "devices to aid ambulation in the spastic hemiplegic," "ambulation devices for the diplegic with crutchable uppers and balance reactions," and "orthoses to improve sitting in the totally involved child with immature reflexes."

213. Holt, K.S.; Jones, R.B.; and Wilson, R.: "Gait Analysis by Means of a Multiple Sequential Exposure Camera," *Developmental Medicine and Child Neurology*, 16:742-745, December, 1974.

Such a method of analyzing abnormal gait is described and illustrated with photographs. "It consists of a hand-held camera which produces a series of eight exposures at regular intervals after the exposure button is pressed, and which produces a complete print within a few seconds of exposure."

214. Hon, Edward H.: "Additional Observations on 'Pathologic Bradycardia,'" *American Journal of Obstetrics and Gynecology*, 118:428-441, February 1, 1974.

"It is the purpose of this report to review the earlier hypotheses concerning 'pathologic bradycardia' and to assess their present value for the determination of the fetal condition." Reviewed are the fetal heart rate (FHR) patterns which are induced by umbilical cord compression and the FHR patterns associated with uteroplacental insufficiency. Also described is the clinical experience that has taken place with FHR patterns. "With the development of electronic techniques, specific FHR patterns indicating umbilical cord compression and uteroplacental insufficiency have been observed. Past and recent fetal animal studies support the concept that ominous FHR patterns indicating fetal asphyxia exist. This is particularly true of fetal rhesus monkey studies where in utero partial asphyxia was associated with the FHR pattern of late deceleration and subsequent fetal monkey brain damage at autopsy. In view of current developments, the present direction of research and clinical use of fetal monitoring seems not unreasonable."

215. Hon, Edward H.: "Biophysical Intrapartal Fetal Monitoring," *Clinics in Perinatology*, 1:149-159, March, 1974.

The indirect and direct techniques of fetal monitoring are described as is the instrumentation used. Then considered are the classification of fetal heart rate, the explanation of periodic fetal heart rate, the physiological basis for fetal heart rate patterns, and baseline fetal heart rate variability.

216. Hooshmand, H.: "Toxic Effects of Anticonvulsants: General Principles," *Pediatrics*, 53:551-557, April, 1974.

Six factors that may cause toxicity from drugs are individually discussed as they specifically relate to anticonvulsants. These are: "(1) dosage; (2) the size of the patient; (3) drug interaction; (4) drug specificity for the disease; (5) the nature of the disease for which the drug is used; and (6) the mode and frequency of medication." Regarding this final factor (6), specific anticonvulsant drugs are considered. Also discussed are the types of anticonvulsant toxicity.

217. Humphrey, M.D.; Chang, A.; Wood, E.C.; Morgan, S.; and Hounslow, D.: "A Decrease in Fetal pH During the Second Stage of Labour, When Conducted in the Dorsal Position," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:600-602, August, 1974.

A randomized trial of 40 normal patients was conducted "to compare the effects of the dorsal and left-tilt delivery positions upon fetal acid-base status." Fetal condition was evaluated by sampling fetal scalp blood at the beginning of the second stage of labor, analyzing the cord blood at delivery, and determining the 2-minute Apgar score. "The patients who delivered within 30 minutes of scalp blood sampling showed a significant decrease in pH as time elapsed... This time effect was related to the posture of the patient. The fetuses of patients lying in the dorsal position showed a decline of pH as time elapsed, whereas the fetuses of the patients in the tilt position did not."

218. Hutchings, Donald E., and Gaston, John: "The Effects of Vitamin A Excess Administered During the Mid-Fetal Period on Learning and Development in Rat Offspring," *Developmental Psychobiology*, 7:225-233, May, 1974.

A teratogenic dose of vitamin A was administered to pregnant rats on Days 17 and 18 of gestation. There were two control groups; one group received the vehicle without the vitamin A and the other was not disturbed during pregnancy. All offspring were fostered after birth to untreated mothers. As adults the offspring were tested as described using lever boxes to obtain a water reward on a variable interval (VI) reinforcement schedule and were also trained on an auditory discrimination task (S^+, S^-). No retardation in growth or development was noted. "Throughout the VI-40 sessions and the S^+ trials of discrimination training, the vitamin A animals had consistently slower rates of response compared to the controls. However, they did not evidence any impaired learning ability; like the non-treated, they extinguished S^- responding, acquired long S^- latencies, and maintained short S^+ latencies. Possibly the treatment may have produced a subtle motor deficit affecting fine motor coordination." Findings are discussed and related to results from other studies.

219. Hyman, A.I.; Haworth, G.; Bowe, E.T.; Daniel, S.S.; and James, L.S.: "Effects of Sympathetic Blockade on the Fetal Responses to Asphyxia," *Biology of the Neonate*, 21:1-8, 1972.

Blood pressure and heart rate were examined in two groups of fetal sheep who were in the last trimester of gestation, and who were asphyxiated by occlusion of their umbilical cord for five minutes. If the animal survived, the occlusion

was repeated after 30 minutes to produce repeated periods of acute asphyxia. One group of four lamb fetuses was given adrenergic blocking agents as described prior to cord occlusion, while the other group of four fetuses was not so treated (controls). Results are presented regarding the effects of the adrenergic blockade and the effects of the asphyxia on both groups. "Fetuses having received a- and β-blocking agents prior to asphyxiation died after the first or second episode. The animals in the control group survived as many as six similar stressful periods. The patterns of blood-pressure and heart rate responses to cord occlusion and release were different between the two groups. Whereas the control animals recovered with a period of hypertension and tachycardia, the 'blocked' animals failed to illicit any increase in sympathetic activity. The implication of these findings is that the adrenergic nervous system assumes an important role during repeated episodes of intrauterine asphyxia."

220. Ingomar, C. Joh., and Klebe, J.G.: "The Transcapillary Escape Rate of T-1824 in Newborn Infants of Diabetic Mothers and Newborn Infants with Respiratory Distress or Birth Asphyxia," *Acta Paediatrica Scandinavica*, 63:565-570, July, 1974.

The dyestuff T-1824 was used for labeling plasma albumin in this study. Thus the transcapillary escape rate of T-1824 was determined in serial measurements after its injection as described in four groups of neonates. Group 1 contained 12 normal infants, Group 2 consisted of 16 infants of diabetic mothers, in Group 3 were 11 infants who developed idiopathic respiratory distress syndrome, and Group 4 contained 13 infants who displayed signs of birth asphyxia. "Among healthy newborn infants the escape rate was found to increase proportional to the magnitude of the placental transfusion. The same applied to infants with respiratory distress and infants of diabetic mothers, the escape rate of whom did not differ from that of healthy infants. By contrast, the escape rate of albumin was, among some cases of birth asphyxia, found to be increased out of proportion to the placental transfusion, which the infants had received." The implications of these findings are discussed, and a comment on the article is made by Ingemar Kjellmer.

221. Jalling, Birgitta: "Plasma and Cerebrospinal Fluid Concentrations of Phenobarbital in Infants Given Single Doses," *Developmental Medicine and Child Neurology*, 16:781-793, December, 1974.

The absorption and disappearance of phenobarbital in single doses was studied in 33 infants over six months of age who were hospitalized because of convulsions. The convulsions were febrile in origin in 25 of the infants and were indications of epilepsy in eight infants. In 19 cases the drug was administered orally and in 14 intramuscularly. The plasma phenobarbital concentration was then followed with sampling and analysis methods described. During the study the doses were increased until the plasma concentration was 15 μg/ml. "Generally, the plasma concentration increased rapidly during the first two hours after administration. Irrespective of route of administration, the peak concentration (in μg/ml) was found to be approximately 1.6 x the dose (in mg/kg). The plasma phenobarbital half-life varied between 37 and 133 hours. A correlation between the dose and the rate of disposition could be demonstrated; the higher the dose, the shorter the half-life ($r = -0.72$). The volume of distribution after intramuscular injection was 0.47 to 0.76 l/kg. In eight infants phenobarbital concentration in cerebrospinal fluid was determined. Equilibrium between plasma and cerebrospinal fluid seemed to be reached within four hours of administration of a single dose." Findings are discussed.

222. James, L. Stanley: "Fetal Blood Sampling," *Clinics in Perinatology*, 1:141-147, March, 1974.

The validity of fetal capillary blood for assessment of the fetal acid-base state is discussed, and the technique of fetal blood sampling, the interpretation of results, and the complications of the procedure are described. The indications for fetal blood sampling are also noted.

223. Jamison, D.L., and Kaye, H.H.: "Accidental Head Injury in Childhood," *Archives of Disease in Childhood*, 49:376-381, May, 1974.

Studied were 857 children who were admitted to the Newcastle General Hospital for head injuries over a 2-year period. Findings are presented regarding age, sex, and social class; observations on the timing of the accident and admission to the hospital; the nature and place of the accident; the symptoms and signs displayed; radiology and surgery performed; and residual sequelae and deaths. "Operation was required in 6% of cases, 1.5% were left with residual neurological deficit, and 1.5% died."

224. Janerich, Dwight T.; Skalko, Richard G.; and Porter, Ian H., eds. *Congenital Defects: New Directions in Research*. New York: Academic Press, 1974. 294 pp.

This volume contains the proceedings of the third symposium sponsored by the Birth Defects Institute of the New York State Department of Health and held in Albany in October, 1972. Contributions to the symposium are presented in six sections and describe research methods and findings relating to the causes and treatment of birth defects. Discussion periods are also recorded, and references are included.

225. Jeffree, Dorothy, and McConkey, Roy: "Extending Language Through Play," *Special Education: Future Trends*, 1:13-16, September, 1974.

A teaching scheme, based on imaginative play and designed to extend the use of verbs and expressive language in mentally handicapped children, is presented. There are six types of activities between teacher and child that are involved in this program. These six are listed and explained. Use of this teaching scheme with a 3 1/2 year old mentally handicapped girl is described.

226. Jerger, James; Burney, Phillip; Mauldin, Larry; and Crump, Betsy: "Predicting Hearing Loss From the Acoustic Reflex," *Journal of Speech and Hearing Disorders*, 39:11-22, February, 1974.

With methods described, the severity of audiometric loss was predicted using acoustic reflex thresholds for pure tones and white noise in 1043 cases having either normal hearing or sensorineural hearing loss. These patients ranged in age from three to 91 years. In an additional 113 patients both severity and slope of loss were able to be predicted. The predictive accuracy of this technique was found to be "amazingly good" with serious errors, as defined, occurring in just 4% of the cases. Findings and the advantages and disadvantages of this method are discussed. "These findings have important implications for the auditory evaluation of babies and young children."

227. Jew, Wing: "Helping Handicapped Infants and Their Families: The Delayed Development Project," *Children Today*, 3:7-10, May-June, 1974.

Described is the Delayed Development Project in San Joaquin County, California, for handicapped children under the age of three and their parents. This project serves such children "who have evidenced significant delays in growth and development, regardless of the cause. Specifically, the project is designed to promote growth in the areas of gross- and fine-motor skills, language development and personal-social (self-help) skills." At age three the child can be transfered to another established program in the school district. Parent involvement in the Project is stressed. If the child is under 18 months of age, a teacher and/or physical therapist visits the home. After age 18 months, the children attend a class five mornings a week for therapy and small group activities. Considered in detail in the article are the methods of parent involvment, the type of child served by the Project, community involvement in the Project, and methods used to evaluate the Project.

228. Johns, Nan: "The Infant Born of a Single Mother Pregnancy; A Study of the Risk," *Australian Paediatric Journal*, 10:277-280, October, 1974.

Three groups of mothers giving birth in an Australian hospital were studied and compared: (a) 90 single mothers who were planning at the time of delivery to keep their infants, (b) 45 single mothers who were planning to place their infants up for adoption, and (c) 45 married mothers (matched controls). Data was obtained relative to the pregnancy, including complications and duration, and on labor and delivery, including duration, complications, methods, state of the infant at birth, birth measurements, and abnormalities. "No significant incidence of factors liable to influence adversely the well-being of the infants born to the single mothers was found."

229. Johnson, Ronald: "Hospital Dentistry for the Handicapped Child," in *Symposium: Dental Management of the Handicapped Child*, Clemens Full, editor. Iowa City, Iowa: University of Iowa, 1974. Pp. 28-34.

The above Symposium was held in May of 1973 at the University of Iowa. In his presentation Dr. Johnson describes the use of general anesthesia and other devices employed in hospital dentistry for handicapped children. Five categories of patients who may require a general anesthetic are listed. The importance of preventive dentistry and nutritional counseling for such patients is considered. Then described is the procedure of treatment that should be followed in performing restorative dentistry for the hospitalized handicapped child. Emphasis is placed on the handling of the general anesthesia. Five steps of preparation for the anesthesia are outlined. Attention is then focused on the operating room scene and the organization of the dental team.

230. Jones, Bill: "The Importance of Memory Traces of Motor Efferent Discharges for Learning Skilled Movements," *Developmental Medicine and Child Neurology*, 16:620-628, August, 1974.

"The evidence is reviewed to show that proprioception may not be as important in the acquisition of patterns of movement as is commonly believed." The proprioceptive inflow theory and the motor outflow theory of "timing" are contrasted. The Phelp's method of physiotherapy, the proprioceptive facilitation techniques, and the Bobath technique are briefly reviewed to illustrate that these methods "rely almost exclusively on the proprioceptive inflow model of voluntary control." Evidence for these two contrasting theories of timing is presented, and "it is argued that many methods of physiotherapy currently employed to improve movement control may be ineffective because they are based upon the proprioceptive feedback theory of skilled performance." In conclusion six arguments against the proprioceptive theory of motor control are listed. "New methods of physiotherapy may need to be developed which concentrate on teaching a child to monitor his own voluntary movements through visual means."

231. Jones, Kenneth L.; Smith, David W.; Streissguth, Ann P.; and Myrianthopoulos, Ntinos C.: "Outcome in Offspring of Chronic Alcoholic Women," *Lancet*, 1:1076-1078, June 1, 1974.

A group of 23 women from the Collaborative Perinatal Project displayed evidence from their records that they had been chronic alcoholics before and during pregnancy. These 23 women were each matched with two control women, and all charts of the women and their offspring were evaluated. In the alcoholic group there was a perinatal mortality rate of 17%, compared to a 2% rate in the controls. Thirteen of the children of the alcoholic women were evaluated at seven years of age. "In the survivors, borderline-to-moderate mental deficiency was the most frequent problem, occurring in 44%, while 32% had enough abnormal features from the physical examination alone to suggest the fetal alcohol syndrome. The frequency of adverse outcome in the pregnancies of chronically alcoholic women is of such a magnitude that serious consideration should be given toward early termination of pregnancy in such women."

232. Jones, Margaret H.: "Teratological Factors in Cerebral Palsy," in *Advances in Teratology, Volume 5* edited by D.H.M. Woollam. New York: Academic Press, 1972. Pp. 113-141.

Aspects considered are the genetic factors in cerebral palsy, the contributions of small infants and multiple pregnancies to the problem, "factors operating during pregnancy, delivery and early infancy," "clinical pathological correlations with reference to prenatal factors," and congenital anomalies other than those of the central nervous system. A detailed listing is presented of "syndromes in which abnormal muscle tone occurs: hypotonicity." There are several pages of references.

233. Jones, Reginald L.: "Correlates of Orthopedically Disabled School Children's School Achievement and Interpersonal Relationships," *Rehabilitation Literature*, 35:272-274+, September, 1974.

A study was conducted on 102 orthopedically disabled children, ages six to 16 years, who attended a special elementary school to investigate the following general hypothesis: "as degree of physical dependency decreases and as mobility increases, the orthopedically disabled child becomes more internally controlled, better adjusted in his/her relationships to significant others (e.g. teachers and peers), and achieves at higher levels." Specific hypotheses were also studied. Information was obtained from teachers via a teacher questionnaire which is included in the article. Statistical interrelationships were determined among eight listed variables. Findings indicated that "many relationships hypothesized to exist among ambulation status, related dependency, locus of control, and school achievement in orthopedically disabled children were not supported at reliable statistical levels." Possible reasons are considered.

234. Kalbac, Richard W., and Newman, Robert L.: "Amniotic Fluid Analysis in Complicated Pregnancies," *Obstetrics and Gynecology*, 44:814-818, December, 1974.

Reported is a study involving 250 high-risk obstetric patients on whom 324 amniocenteses and lecithin/sphingomyelin ratio determinations were performed. The indications for these procedures in the cases are listed with diabetes and preeclampsia being the most frequent complications. L/S ratio findings are related to the development of RDS and infant survival in these cases, and two cases are described in which fetal complications resulted after the amniocentesis. "It is our belief that the L/S ratio should be determined in any gestation in which intervention is anticipated, in order to coordinate the termination of the pregnancy with the infant's optimal chances of survival."

235. Kaminetzky, Harold A.; Langer, Alvin; Baker, Herman; Frank, Oscar; Thomson, Allan D.; Munves, Elizabeth D.; Opper, Anita; Behrle, Franklin C.; and Glista, Barbara: "The Effect of Nutrition in Teen-Age Gravidas on Pregnancy and the Status of the Neonate. I. A Nutritional Profile," *American Journal of Obstetrics and Gynecology*, 115:639-646, March 1, 1973.

The Newark Maternal and Infant Care Project is described. This Project annually provides the care for approximately 500 unwed pregnant girls, ages 13 to 17 years. Various facets of the Project are explained, including the dietary survey conducted each trimester of pregnancy, the laboratory studies regularly made, the obstetric study, and the pediatric evaluation. A nutritional profile for 130 patients is presented. "Physical stigmas, dietary histories, and circulating biochemical values indicate gross undernutrition of many in the group." Further discussion by other physicians is conducted after the text.

236. Kaminski, Monique, and Papiernik, Emile: "Multifactorial Study of the Risk of Prematurity at 32 Weeks of Gestation. II. A Comparison Between an Empirical Prediction and a Discriminant Analysis," *Journal of Perinatal Medicine*, 2:37-44, 1974. (Series: For I see #362.)

Findings using two methods of predicting the occurrence of premature delivery were compared. These two methods are: (1) an empirical calculation of the risk of prematurity conducted at 32 weeks of pregnancy and (2) "a function established according to a discriminating analysis which should premit us, using the best statistical method, to improve our possibilities of prediction and thus to prevent the risk." Material and results using both methods are described. The second method was found to be "much more accurate when applied to the same sample as the empirical method." Also discussed are the results of using the two methods on a prospective sample of 750 patients.

237. Kandall, Stephen R., and Gartner, Lawrence M.: "Late Presentation of Drug Withdrawal Symptoms in Newborns," *American Journal of Diseases of Children*, 127:58-61, January, 1974.

Seven case reports are presented to illustrate the possibility of late presentation of drug withdrawal symptoms in newborns. The symptoms were seen to first occur at between two to four weeks of age in these infants. One infant died. "Although maternal drug-taking patterns varied widely, methadone hydrochloride was the common drug of use or abuse in all cases."

238. Kang, Ellen S., and Scanlon, John: "Concentrations of the Free Amino Acids in Human Amniotic Fluid During Normal and Abnormal Pregnancies," *American Journal of Obstetrics and Gynecology*, 119:603-609, July 1, 1974.

Reported are the concentrations of amino acids present in amniotic fluid samples obtained from ten normal and ten 'high-risk' pregnancies as described. Other studies are reviewed, and differences in findings are noted.

239. Kapitulnik, J.; Valaes, T.; Kaufmann, N.A.; and Blondheim, S.H.: "Clinical Evaluation of Sephadex Gel Filtration in Estimation of Bilirubin Binding in Serum in Neonatal Jaundice," *Archives of Disease in Childhood*, 49:886-894, November, 1974.

This technique and its usage with serial serum specimen from 116 infants who had neonatal jaundice are described. Of these 116 infants, 89 were given one or more exchange transfusions, and clinical kernicterus was diagnosed in nine infants. The test results were found in most cases to be "in accord with the independent clinical decision to perform exchange transfusion. In all 9 cases with clinical kernicterus the Sephadex test was strongly positive (very low bilirubin binding affinity of serum)." "The test was positive at lower bilirubin levels and bilirubin/albumin molar ratios in preterm as compared with term neonates, especially in those in poor clinical condition. Among term infants the test indicated an increase in bilirubin binding affinity after the 5th day of life." Among the aspects discussed further are the advantages of the Sephadex technique, the relationship seen between the Sephadex results and the selection of cases for exchange transfusion, and the information this study provided relative to "the relation between the binding of bilirubin to albumin and the degree of maturity and the age of the infant."

240. Kariniemi, V.; Ahopelto, J.; Karp, P.J.; and Katila, T.E.: "The Fetal Magnetocardiogram," *Journal of Perinatal Medicine*, 2:214-216, 1974.

The methods and preliminary results of human fetal magnetocardiography (FMCG) are presented. "We have succeeded in counting the FHR electronically from the FMCG. The maternal heart activity is less disturbing than in the external FECG."

241. Karkinen-Jääskelãinen, Marketta, and Saxen, Lauri: "Maternal Influenza, Drug Consumption, and Congenital Defects of the Central Nervous System," *American Journal of Obstetrics and Gynecology*, 118:815-818, March 15, 1974.

Although studies have shown there to be a significant increase in CNS defects in children whose mothers had a history of influenza during the first trimester of pregnancy, the situation is a complex one because of the possible influence of drugs taken by the mother during this period on the occurrence of the defects. The drug consumption of a group of mothers whose children had CNS defects and who had had influenza during the first trimester of pregnancy was analyzed. These findings were compared to those from a group of mothers who had no history of influenza but who had children with CNS defects. For each of these two study groups, a normal matched control group was formed. Findings indicate that about 52% of the mothers with a history of influenza and a

defective child reported taking drugs during the first trimester of their pregnancies while about 28% of those who did not have influenza but had a defective child had taken drugs. In the two matched control groups the percentages of mothers who had taken drugs was 17% and 11%, respectively. "We emphasize the frequently overlooked bias in epidemiologic investigations because of the complex study situation. Diseases and their causative agents and consequences cannot be distinguished from the therapeutic agents as teratogens. Where drugs and viruses are concerned, this limitation should be borne in mind."

242. Karlsson, K.: "The Influence of Hypoxia on Uterine and Maternal Placental Blood Flow, and the Effect of a-Adrenergic Blockade," *Journal of Perinatal Medicine*, 2:176-184, 1974.

Experiments were conducted on pregnant rabbits in order to investigate the questions of "whether hypoxic vasoconstriction takes place in the uterus-placental circulation in the pregnant rabbit, and if so, what the mechanism for vasoconstriction might be." Methods are described, and findings are presented. "In this series of experiments hypoxia caused a consistent and significant fall in blood flow to the myometrium, and even more pronounced fall in flow to the placenta." "In conclusion, the present experiments suggest that all the female reproductive organs, including the myometrium and the maternal part of the placenta, take part in a generalized peripheral vasoconstriction imposed by maternal hypoxia. The results further suggest that this vasoconstriction is mediated by liberated catecholamines acting on a-adrenergic receptor sites both in the myometrium and the placenta."

243. Karlsson, K., and Kjellmer, I.: "The Uterine and Maternal Placental Blood Flow During Hyperoxia," *Journal of Perinatal Medicine*, 2:170-175, 1974.

The fact is noted that extra oxygen is often given the mother when signs of fetal distress are evident. Little is known about the effect of this pure oxygen on the utero-placental circulation. Findings from experiments conducted on pregnant rabbits showed that "the blood flow to the myometrium decreased when the animal breathed 100 per cent oxygen. This decrease was statistically significant. The placental blood flow also demonstrated a statistically significant decrease during hyperoxia." Data are presented. "It is concluded that breathing pure oxygen induced a moderate constriction of the placental and myometrial vascular beds. The accompanying reduction of blood flow may be of consequence for the amount of oxygen carried to the maternal part of the placenta and made available for fetal oxygenation."

244. Kastendieck, E.; Künzel, W.; and Zimmermann, P.: "Quantitative Relationships Between Slowing of the Fetal Heart Rate and Changes in Base-Excess in the Second Stage of Labor," *Journal of Perinatal Medicine*, 2:106-109, 1974.

In an attempt to correlate the dip areas of fetal cardiac deceleration seen during uterine contractions with loss of base in fetal blood, the dip areas and the value of base excess in scalp blood and in the blood of the umbilical artery were measured in 26 women during the second stage of labor. "The increase in base deficit was calculated from the difference in base-excess between scalp

blood (BE_s) and in the blood in the umbilical artery (BE_{ua})." The increase in base deficit was found to be closely related to the dip area, and quantitative methods are presented. "There is a distinct connection between the two parameters. This means that with a dip area of 40 cm^2 a base loss of 12 meq/l is to be expected, while there are no changes in the buffered base of the fetal blood as long as there are no decelerations. These observations enable an estimate of the buffered base loss in fetal blood at the end of the second stage of labor."

245. Katona, Francis, and Eckstein, Herbert B.: "Treatment of the Neuropathic Bowel by Electrical Stimulation of the Rectum," *Developmental Medicine and Child Neurology*, 16:336-339, June, 1974.

Such a method of treatment is described, and the results of usage of the technique with seven children who had myelomeningocele, neuropathic bladder and neuropathic bowel and who did not have spontaneous bowel movements are presented. "All seven achieved remarkable improvement in bowel function. It is not possible to make a final assessment of this method of treatment, but the preliminary trials suggest that it may be of great benefit in the achievement of bowel function by children with paraplegia."

246. Kauffman, Carole; Tompkins, Pat; Mitchell, Helen; Jackson, Mary; Schwalenstocker, Anne; and Spence, Judy: "Nursing Responses to Problems of Children with Lead Poisoning," *Clinical Proceedings, Children's Hospital National Medical Center*, 30:118-130, May, 1974.

These authors present an overview of the problem by reporting the case history of "John." They see three factors to be "clearly associated with this problem: (1) dilapidated housing - housing containing peeling and falling leaded paints and plaster, (2) childhood pica, and (3) strained mother-child relationships." Also considered are the medical aspects of lead poisoning, the observation and evaluation of the child in the clinic, the nursing care of the hospitalized child, and the role of the visiting nurse. A question and answer discussion is conducted.

247. Kelly, John V.: "Diagnostic Techniques in Prepartal Fetal Evaluation," *Clinical Obstetrics and Gynecology*, 17:3:53-82, September, 1974.

Reviewed are the techniques in use in 1974 to determine fetal maturity, to measure fetal growth, to assess fetal well-being before labor, to assess placental well-being prior to labor, and other miscellaneous antenatal diagnostic tests. In the "Summary" the author discusses the best method in use in each of these categories of fetal evaluation. A 10-page bibliography follows the article.

248. Kennedy, Joan M. *Orthopaedic Splints and Appliances*. London: Baillière Tindall, 1974. 200 pp.

In this book the author describes how to use and fit orthopedic splints and appliances. The use of various materials is discussed in the first three chapters, followed by chapters concerned with splints and appliances for particular limb areas to rehabilitate and correct both acquired and congenital disabilities. Detailed descriptions and illustrative photographs are numerous.

249. Kennell, John H.; Jerauld, Richard; Wolfe, Harriet; Chesler, David; Kreger, Nancy C.; McAlpine, Willie; Steffa, Meredith; and Klaus, Marshall H.: "Maternal Behavior One Year After Early and Extended Post-Partum Contact," *Developmental Medicine and Child Neurology*, 16:172-179, April, 1974.

Previous studies are described which are concerned with the effects on the maternal-infant relationship of early separation, such as is the case with preterm or sick newborns. Then presented is a study in which two groups of primiparous mothers (14 in each group) and their full-term infants were followed one month and one year after delivery to determine differences in maternal behavior. One group of mothers (controls) had routine described contact with their newborns while in the hospital. The other group had described "extended contact" while in the hospital. Follow-up methods and the scoring system used are explained. Results indicated that "measurable differences, lasting for as long as one year, are apparent between mothers with early and extended contact and those separated from their infants in the early hours after birth." Thus the importance of a special attachment period following birth is considered. "In the human mother, the disproportionately high percentage of mothering disturbances, such as child abuse and deprivation failure-to-thrive, which occur after a mother has been separated from her sick newborn infant, force a thorough review and evaluation of our present perinatal practices."

250. Khojandi, M., and Tyson, J.E.: "Gestational Diabetes: The Dilemma of Delivery," *Obstetrics and Gynecology*, 43:1-6, January, 1974.

The following factors were investigated in 84 patients with gestational diabetes in a prospective study: "a) the effectiveness of consistent dietary control in the management of maternal gestational diabetes and fetal size, b) the effects of the time and mode of delivery in such patients, and c) those factors of possible prognostic significance in determining fetal outcome." The management of these patients is thoroughly described. Using a double-blind method, 44 patients were randomly selected to be delivered by cesarean section and 40 by vaginal delivery. "With strict attention to dietary management, it was possible to maintain the basal maternal plasma glucose concentrations below 100 mg/100 ml from the initiation of management until delivery. Under these circumstances, perinatal mortality and morbidity were not increased with advancing gestational age. Neonatal complications were minimal for either route of delivery." "No advantage to preterm delivery by cesarean section was found in this study, since one of the contraindications to vaginal delivery - fetal macrosomia - was averted through dietary control."

251. Klebe, Joachim, and Ingomar, Carl Joh: "Placental Transfusion in Infants of Diabetic Mothers Elucidated by Placental Residual Blood Volume," *Acta Paediatrica Scandinavica*, 63:59-64, January, 1974.

Placental residual blood volume was measured as described in 58 infants of diabetic mothers and 65 infants of non-diabetic mothers in order to determine the size of the placental transfusion and the influence of mode of delivery and time of clamping on the size of the transfusion. "It is shown that infants of diabetic mothers delivered vaginally compared with infants of diabetic mothers delivered by caesarean section, have a larger placental residual blood volume, if early clamping is employed." "Further, it is shown that the placental

residual blood volume is significantly larger in infants of diabetic mothers but only after vaginal delivery with early clamping, compared with the same group of infants of non-diabetic mothers." Results are discussed.

252. Klebe, Joachim G., and Ingomar, Carl Joh: "The Influence of the Method of Delivery and the Clamping Technique on the Red Cell Volume in Infants of Diabetic and Non-Diabetic Mothers," *Acta Paediatrica Scandinavica*, 63:65-69, January, 1974.

Red cell volume was calculated as described in 35 infants of diabetic mothers (IDM) and 18 infants of non-diabetic mothers (non-IDM) in order to determine the influences of clamping technique, method of delivery, and diagnosis of IDM or non-IDM on neonatal red cell volume. The red cell volume was found to be "less in infants delivered vaginally with early clamping, compared with infants delivered by caesarean section with early clamping." "These findings support the theory that during vaginal delivery a temporary change in the distribution of the foeto-placental blood volume between placenta and child occurs. It is suggested that IDM during vaginal delivery with early clamping deposit more blood in the placenta than do the non-IDM, since we found a smaller red cell volume per kg body weight in the IDM under these circumstances."

253. Klein, Jenny W., and Randolph, Linda A.: "Placing Handicapped Children in Head Start Programs," *Children Today*, 3:7-10+, November-December, 1974.

The case of "Billy," a deaf child who entered a Head Start class, is described. Some 29,000 handicapped children joined Head Start classes in 1973. This was brought about by the mandate in the 1972 amendments to Head Start legislation. This mandate and methods used to recruit eligible handicapped children are explained. Observations that denote the desirability of preschool programs containing both handicapped and nonhandicapped children are listed. The curriculum and its variations are then discussed.

254. Klein, Michael C.; Sayre, James W.; and Kotok, David: "Lead Poisoning," *American Journal of Diseases of Children*, 127:805-807, June, 1974.

The current status of this problem is considered, including new concerns which have developed, recent studies, and recommendations as to management.

255. Klein, Robert: "The Pediatrician and the Prevention of Lead Poisoning in Children," *Pediatric Clinics of North America*, 21:277-290, May, 1974.

Aspects considered include the sources of lead poisoning, the condition of clinical lead poisoning in children, screening children for lead poisoning, the eradication of childhood lead poisoning by housing inspection and removing lead hazards, and the role of the pediatrician in enforcing the sanitary code.

256. Klingberg, Marcus A.; Abramovici, Armand; and Chemke, Juan, eds. *Drugs and Fetal Development.* New York: Plenum Press, 1972. (Advances in Experimental Medicine and Biology, Volume 27.)

Contained in this volume are most of the papers presented at an International Symposium on The Effect of Prolonged Drug Usage on Fetal Development which was held in Israel in 1971. Over 40 papers are included. There are many reference lists, a list of the participants in the symposium, and a subject index.

257. Klopper, A., and Shaaban, M.M.: "Variability of Fetoplacental Steroids in Maternal Plasma in Late Pregnancy," *Obstetrics and Gynecology,* 44:187-193, August, 1974.

Progesterone, unconjugated estradiol-17β, and unconjugated polar estrogens were serially measured as described in the serum of ten women during the final four weeks of pregnancy. All patients were healthy and delivered surviving infants of normal birthweight. Much data are presented regarding variations in values for individual patients and among patients. "The levels of unconjugated estradiol-17β were least variable, and from this point of view assays of this steroid are recommended as a measure of fetoplacental function."

258. Koenigsberger, M. Richard; Patten, Bernard; and Lovelace, Robert E.: "Studies of Neuromuscular Function in the Newborn: 1. A Comparison of Myoneural Function in the Full Term and the Premature Infant," *Neuropädiatrie,* 4:350-361, December, 1973.

In order to investigate neonatal neuromuscular function, a described repetitive stimulation technique was used to study the evoked surface muscle action potential (MAP) of 11 full term infants and six premature infants (less than 38 weeks gestational age). Methods and results are thoroughly explained. "At stimulation rates of 20 IPS, only the prematures showed post-tetanic exhaustion. At trains of 50 IPS for 15 seconds, where most adults and older children show no decrement in MAP all neonates showed decrement. Post-tetanic exhaustion at this rate sometimes exceeded five minutes. We conclude that newborns exhibit less neuromuscular reserve than do older children, and that prematures, in turn, have less myoneural reserve than do full term infants. The practical and theoretical benefits of this harmless technique are discussed."

259. Kogan, Kate L.; Tyler, Nancy; and Turner, Patricia: "The Process of Interpersonal Adaptation Between Mothers and Their Cerebral Palsied Children," *Developmental Medicine and Child Neurology,* 16:518-527, August, 1974.

Previous studies in this area are reviewed. Ten cerebral palsied children, ages 1 to 4 years, and their mothers were studied regarding their interaction during both play and physical therapy sessions on three occasions at ten month intervals. Also studied at these intervals was the interaction between these children and their physical therapists. The children and the procedures of data collection and data analysis are described. Among the findings were that "expressions of affection and positive acceptance by the mothers and therapists were seen to decrease gradually over time. Without exception, all mothers exhibited some loss of affection, particularly those mothers whose children were

not walking by the end of the study. The possibility is discussed that the emphasis placed by doctors and other workers on the physical disability of children with cerebral palsy may be a contributory factor to such parental reactions."

260. Koivisto, M., and Jouppila, P.: "Neonatal Hypoglycaemia and Maternal Toxaemia," *Acta Paediatrica Scandinavica*, 63:743-749, September, 1974.

Investigated in 131 neonates born to 124 toxemic mothers was the incidence of hypoglycemia. The mothers were divided into mild and severe pre-eclampsia groups. Data are presented on the occurrence of hypoglycemia in these infants in relation to the factors of the severity of the maternal toxemia, the urinary estriol excretion, and the small-for-dates and normal birth weight infants. "The reduced energy reserves in newborn infants of toxaemic mothers with severe pre-eclampsia and/or a low urinary oestriol level and in infants with intrauterine growth retardation, together with increased utilization of carbohydrates result in a high incidence of neonatal hypoglycaemia. An added stress, such as birth hypoxia and late initiation of feeding, increase the likelihood of hypoglycaemia."

261. Kopp, Claire B.: "Fine Motor Abilities in Infants," *Developmental Medicine and Child Neurology*, 16:629-636, October, 1974.

Other studies in this area are reviewed. The subjects in this study were 26 full-term and ten pre-term infants, approximately eight months of age, who had no neurological deficit. "The purpose of this study was to determine whether infants, classified solely on the basis of whether they demonstrated co-ordinated or clumsy movements, differed in the use of sensori-motor schemas." These schemas were defined as being "visual-manipulative interactions with objects." The design of the study, the procedure used, and the classification system are described. On the basis of testing, the infants were classified as having either coordinated or clumsy movements. "Comparisons were made of the duration and frequency of commonly observed behaviors (e.g. reaching for objects) exhibited by the infants in each group. The results indicated that the co-ordinated group did significantly more object-exploring, both manipulative and oral, than the clumsy group. Multivariate analyses of commonly observed behaviors showed a significant over-all group difference for frequency of behaviors and a trend towards duration of behaviors. The results are discussed in terms of each group's style of object interaction."

262. Korner, Anneliese; Thoman, Evelyn B.; and Glick, Joh H.: "A System for Monitoring Crying and Noncrying, Large, Medium, and Small Neonatal Movements," *Child Development*, 45:946-952, December, 1974.

"A neonatal movement monitor was devised, which, in addition to the measures obtained by other movement monitors, discriminates among large, medium, and small movements; automatically screens out caretaker-induced motility; and provides several activity counts unconfounded by the infant's crying." This monitor is described and diagramed, and validation studies made on it are explained. "Simulation tests demonstrated that the static weight of the baby does not affect the sensitivity of the AC-coupled mattress, and that the threshold settings measuring movement amplitudes are highly stable. Rank correlations

between monitor activity counts and independent visual observation ratings yielded a pooled value of .93. Also discussed are the advantages and uses of the monitoring system. A study in which the monitor was used to investigate the "characteristics of crying and noncrying activity of full-term neonates" is presented in the article following.

263. Kretchmer, Norman, and Hasselmeyer, Eileen G., eds. *Horizons in Perinatal Research; Implications for Clinical Care.* New York: John Wiley and Sons, 1974. 193 pp.

Published in this monograph are the papers presented at a symposium on this subject held at Stanford, California, and sponsored by the Perinatal Biology and Infant Mortality Branch of the National Institute of Child Health and Human Development. Articles deal with the "environmental influences on maternal and infant capabilities" and with "genetic and chemical influences on development." "Aspects of international perinatal research" are also considered. "Probably the most important general conclusion reached by all participants was that if our knowledge and manpower in the all important field of perinatal biology is to advance, then the unionistic separation between pediatrics and obstetrics must disappear." There are numerous bibliographies and a subject index.

264. Kristensson, Krister; Olsson, Yngve; and Sourander, Patrick: "Virus Encephalitis: Pathogenesis in the Immature Brain," *Developmental Medicine and Child Neurology*, 16:382-394, June, 1974.

The literature on the pathogenesis of virus infections on the immature nervous system is reviewed in this article. Data are presented concerning the invasion and spread of the virus within the nervous system, the susceptibility of the cells of the immature system to virus infection, and the effects of viruses seen on the immature nervous system in animals and humans.

265. Kulenkampff, M.; Schwartzman, J.S.; and Wilson, J.: "Neurological Complications of Pertussis Inoculation," *Archives of Disease in Childhood*, 49:46-49, January, 1974.

Retrospectively studied were 36 children, seen over an 11 year period, who were thought to have developed neurological complications from pertussis inoculation (DPT) within 14 days after the inoculation. Of the 36 children, 32 convulsed. Their clinical characteristics are described as are the sequelae in this group of patients. In 12 of the children there were possible contributing factors which may have predisposed the children to the complications. "It is recommended that pertussis vaccine should not be given to patients with a history of fits, or a family history of fits in first-degree relatives, or to those who have had a reaction to previous inoculations, those who have had recent intercurrent infection, or those with presumed neurological deficit."

266. Kutt, Henn: "The Use of Blood Levels of Antiepileptic Drugs in Clinical Practice," *Pediatrics*, 53:557-560, April, 1974.

Pertinent questions considered include what dosage regimen to use, what blood levels to expect with a dose of specific drugs, what blood levels of specific drugs are effective in seizure control, what blood levels of specific drugs are associated with intoxication, and when to check blood levels.

267. Kynast, Geno, and Saling, Erich: "Routine Diagnosis of Fetal Lung Maturity," *Journal of Perinatal Medicine*, 2:208-213, 1974.

Described and diagramed is a routine densitometric procedure, developed by the authors and used with the foam test of Clements for screening, to assess the lecithin content in more than 400 samples of amniotic fluid from 360 patients. "A small group of patients was used to demonstrate that after early diagnosis of lecithins deficit, delay of labor may allow lung maturation in some cases. When this was not achieved more or less severe symptoms of RDS were observed. A relationship between low lecithins values and dysmaturity was observed. Administration of tocolytic drugs (Th1165a) did not raise the lecithins content. In conclusion, our procedure makes it possible to recognize respiratory disturbances caused by low lecithin content."

268. Lambert, Beth B., and Palmer, Miriam R.: "Eversion Strap for Hemiplegic Patients," *Physical Therapy*, 54:1308-1309, December, 1974.

Such a strap, which is used to control inversion of the foot during the swing phase of walking in hemiplegic patients, is described and pictured. It is an alternative to a short-leg brace to solve the problem.

269. Lance, James W., and Burke, David: "Mechanisms of Spasticity," *Archives of Physical Medicine and Rehabilitation*, 55:332-337, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Discussed are clinical findings in man and experimental findings in cats regarding changes seen in reflex responses in spasticity, and characteristics of reflex tramsmission in spasticity. Conclusions are presented. "Spasticity indicates that the muscle-stretch reflex has become isolated from its supraspinal inhibitory-modulation system, so that the alpha and dynamic fusimotor (spindle) neurons are abnormally excitable. In spastic lower limbs, the stretch reflex shows two main features: (1) flexor and extensor excitation dependent on stretch velocity, and (2) flexor excitation and extensor inhibition dependent on the lengthening of the muscle during stretch (clasp-knife phenomenon). In the upper limbs patients with cerebral palsy show a length-dependent inhibition of the biceps and excitation of the triceps, whereas patients with either hemiplegia or Parkinson's disease show excitation of both muscles as the fibers stretch. The situation is complicated by abnormal responsiveness to vibration; percussion over a tendon or a bony prominence starts a chain of reflex contractions as the vibration wave spreads through the limbs or trunk."

270. Lapinleimu, Kaisa; Cantell, K.; Koskimies, O.; and Saxen, L.: "Association Between Maternal Herpesvirus Infections and Congenital Malformations," *Lancet*, 1: 1127-1129, June 8, 1974.

In a prospective study blood samples were obtained from 224 mothers of defective children and their matched controls both during early pregnancy and 1 to 2 months after delivery. The samples were analyzed "for antibodies against ten different viruses, Mycoplasma pneumonia, and Toxoplasma. Seroconversions were found in 103 sera in the defect group and in 71 control sera. The excess in the defect group was mainly due to increasing antibody titres against herpesviruses (herpesvirus types 1 and 2, cytomegalovirus, and varicella-zoster)."

271. Laurence, K.M.: "Fetal Malformations and Abnormalities," *Lancet*, 2:939-942, October 19, 1974.

Recent developments in the prenatal screening and detection of chromosome abnormalities, neural-tube defects, and metabolic disorders are individually discussed. Also considered are the problems involved.

272. Leake, Rosemary D.; Gunther, Ronald; and Sunshine, Philip: "Perinatal Aspiration Syndrome: Its Association with Intrapartum Events and Anesthesia," *American Journal of Obstetrics and Gynecology*, 118:271-275, January 15, 1974.

In order to investigate the perinatal aspiration syndrome (PAS), a series of live deliveries at the Stanford Medical Center were retrospectively reviewed. Fifty babies (1.5% in this series) having PAS, as defined, were identified. Findings indicated there to be "clear-cut evidence that intrapartum complications, fetal distress, breech presentations, and mid forceps deliveries are associated with an increased risk of PAS." Although the number of cases was small, there was found to be a significant association between the use of epidural anesthesia and the development of PAS.

273. Lee, Jennifer M., and Warren, Margaret P.: "Ice, Relaxation and Exercise in Reduction of Muscle Spasticity," *Physiotherapy*, 60:296-302, October, 1974.

Electromyography was used to objectively measure the effects of ice, relaxation, and exercise, alone or in combination, on spasticity. The knee jerk was the stretch reflex studied in ten adult hemiplegic patients and four normal controls. Testing and measurement methods are described. "The results indicate that although ice and relaxation reduce the magnitude of the reflex response, ice, or ice and exercise, are most successful in reducing motor unit activity, both in the short and long term. There does not appear to be any advantage in combining exercise with ice to reduce spasticity; ice alone is just as effective." Findings are discussed.

274. Lee, K.H., and Blackwell, R.: "Observations on the Configuration of the Fetal Electrocardiogram Before and During Labour," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:61-69, January, 1974.

The fetal electrocardiogram was successfully recorded by direct fetal electrode at various stages before and during labor in 32 patients of whom 12 displayed clinical signs of fetal distress as described and the other 20 fetuses were considered to be at risk. Methods used are described in detail as are the observations made on the configuration of the fetal electrocardiogram in these cases and their fetal outcome.

275. Lejarraga, H., and Peckham, Catherine S.: "Birthweight and Subsequent Growth of Children Exposed to Rubella Infection In Utero," *Archives of Disease in Childhood*, 49:50-54, January, 1974.

A follow-up study of preschool age was conducted on 212 children who had been exposed to maternal rubella infection. Birthweight was compared to described standards, and head circumference and body weight were determined at follow-up and compared to standards. The 212 children were divided into three groups: Group A contained 97 patients who were "seronegative" at examination and had no congenital rubella defects; Group B contained 71 children who were "seropositive" but displayed no manifestations of the rubella; and Group C consisted of 44 patients who were "seropositive" and had congenital rubella defects as described. The mean birthweight of the children in Groups A and B "did not differ significantly from the 50th Centile or from each other," but the children in Group C

"had significantly lower birthweights." Head circumference was also significantly lower in the Group C children while it was normal in Groups A and B. "The findings for body weight at follow-up were similar, reflecting absence of catch-up growth in weight in the children with congenital rubella defects. This study has shown that intrauterine growth retardation does not present as the sole manifestation of maldevelopment in congenital rubella."

276. Levine, M.D.; McNeil, D.E.; Kaback, M.M.; Frazer, R.E.; Okada, D.M.; and Hobel, C.J.: "Second-Trimester Fetoscopy and Fetal Blood Sampling: Current Limitations and Problems," *American Journal of Obstetrics and Gynecology*, 120:937-943, December 1, 1974.

Reported are the experiences of the authors in evaluating the safety and capabilities of fetoscopic instruments in the pregnant ewe and in 11 human pregnancies in the second trimester. The equipment and methods used are described and results are presented. Some unresolved questions are also considered. "In light of our experience, and because of the many unanswered questions which remain concerning the safety and methodology of fetoscopy, we conclude that further instrument modification and research are required before second-trimester fetoscopy and fetal tissue sampling can be accepted as a simple, safe, and practical clinical approach."

277. Lezberg, Sandra F.: "Screening for Scoliosis: Preventive Medicine in a Public School," *Physical Therapy*, 54:371-372, April, 1974.

A screening program for scoliosis, initiated in the Falmouth, Massachusetts, public schools, is explained. School nurses and physical education teachers were given an in-service training program on scoliosis. Observation methods are described. Screening is conducted once each year, with students in grades 5 to 9 screened twice a year because they are considered to be in the high risk age group. Of the 6,000 students in kindergarten through grade 12 screened, more than 80 undiagnosed cases of scoliosis were discovered.

278. Lietman, Paul S.; Haslam, Robert H.A.; and Walcher, J. Ronald: "Pharmacology of Dantrolene Sodium in Children," *Archives of Physical Medicine and Rehabilitation*, 55:388-392, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. The "pharmacokinetics" of dantrolene sodium was studied in 19 chronically spastic children, ages 1 1/2 to 16 1/2 years. The drug was administered in varying doses and for varying periods as described. The safety of the drug was monitored using both clinical and laboratory procedures. Findings and conclusions are presented. "Side effects consisted chiefly of drowsiness and dizziness and were prominent only in single-dose studies; they were not a problem in a two-week study with the drug given four times per day. It was concluded that dantrolene sodium is safe for administration to children in divided doses of 4 to 12 mg/kg/day for periods of two weeks, the maximum period used in this study."

279. Light, Irwin J., and Linnemann, Calvin C., Jr.: "Neonatal Herpes Simplex Infection Following Delivery by Cesarean Section," *Obstetrics and Gynecology*, 44:496-499, October, 1974.

Three case reports are presented of infants who developed neonatal herpes simplex infection after being delivered by cesarean section following rupture of the membranes. One of the infants died, one survived with severe neurological handicap, and one survived with seizures and an abnormal EEG. "This report indicates that cesarean section following rupture of the fetal mambranes, even of short duration, may be inadequate in preventing neonatal infection with herpes simplex."

280. Lindback, T.; Frantz, T.; Skjaeraasen, J.; and Graven, S.: "Phospholipids in Amniotic Fluid. I. Relationship of Phospholipid Concentrations to Gestation Maternal Disease and Fetal Outcome," *Acta Obstetricia et Gynecologica Scandinavica*, 53:219-226, 1974.

Studied in 118 samples of amniotic fluid from 72 patients were the phospholipid concentrations and their reactions to "gestational age, maternal disease and fetal outcome." Methods of analysis are described. Of the 118 samples, 82 were from 40 Rh-sensitized patients, 19 were from 15 diabetic patients, and 17 were from either healthy or pre-eclamptic mothers. The lecithin concentration in the amniotic fluid samples was found to "begin to increase sharply from 34 weeks in infants where pulmonary maturation proceeds normally." RDS was found "to be associated with lecithin concentrations < 1.3 mm/100 ml and an L/S ratio < 2.0." "Delayed pulmonary maturation may occur in infants of diabetic mothers and erythroblastic infants. It is suggested that this may be related to the severity of the condition."

281. Lindberg, Bo S.; Johansson, Elof D.B.; and Nilsson, Bo A.: "Plasma Levels of Nonconjugated Oestradiol-17β and Oestriol in High Risk Pregnancies," *Acta Obstetricia Et Gynecologica Scandinavica*, Supplement 32:37-51, 1974.

This article is the last in a series of three articles contained in this Supplement on the subject of "oestrogens during pregnancy." The first article deals with the "radioimmunological methods for the estimation of oestrone, oestradiol-17β and oestriol in pregnancy plasma," and in the second article findings are reviewed regarding "plasma levels of nonconjugated oestrone, oestradiol-17β and oestriol during uncomplicated pregnancy." Such levels found in patients having the following complications of pregnancy were described in the third article: pre-eclampsia, Rh-isoimmunization, diabetes mellitus, or 'retarded fetal growth.' Based on the results of the reported study the following conclusions were reached: "Low plasma levels of unconjugated oestriol and to some extent oestradiol-17β in combination with pre-eclampsia or fetal growth retardation seem to indicate very high risk for fetal death. In Rh-immunized mothers a rising quotient of oestradiol/oestriol is an omnious sign. In other conditions, however, disturbances in fetal wellbeing were not always predicted by the measurement of plasma levels of oestrogens."

282. Liston, W.A., and Campbell, A.J.: "Dangers of Oxytocin-Induced Labour to Fetuses," *British Medical Journal*, 3:606-607, September 7, 1974.

Studied retrospectively as described were 658 consecutive deliveries of whom one-fourth received oxytocin. Findings indicated "that fetal distress, low Apgar score at five minutes, and special nursery admission were all common in patients receiving ocytocin infusion. Many patients receiving such infusions also had very frequent contractions when compared with others. Though the populations in each group were not standard, the clinical criteria were crude, and the survey was retrospective there are reasonable grounds to believe that the present enthusiasm for oxytocin has perhaps led us in clinical practice to underestimate and forget the dangers of oxytocin to the fetus. Careful monitoring of the fetus of the mother receiving oxytocin is essential."

283. Little, T.M., and Masotti, R.E.: "The Palmo-Mental Reflex in Normal and Mentally Retarded Subjects," *Developmental Medicine and Clinical Neurology*, 16:59-63, February, 1974.

This reflex and the method of its elicitation are described. A survey was conducted "to document the natural history of the reflex from childhood into adult life and to study its relationship to mental retardation and chronic organic brain disease." The reflex was tested in the following subjects: (1) 611 well children and adults without known neurological disease; (2) 102 severely retarded children; and (3) 82 mentally retarded adults. Findings indicated that "the reflex was present in 66 per cent of normal children under the age of three years but it was elicited in only 9 per cent of normal adults. In retarded children under the age of three years it was present in 81 per cent, but it did not sharply decline thereafter, as in normal subjects, and was still present in 44 per cent of the mentally retarded adults." Studies by others involving the palmo-mental reflex are reviewed and its clinical value is considered. "The palmo-mental reflex appears to be a primitive reflex which persists if there is developmental delay or which may re-emerge in acquired brain disease and it is suggested that the reflex is a useful clinical sign."

284. Livingston, Samuel: "Diagnosis and Treatment of Childhood Myoclonic Seizures," *Pediatrics*, 53:542-548, April, 1974.

Approximately 1,500 cases of children having myoclonic seizures are used for the basis of data presented in this article. These cases were studied at the Johns Hopkins Hospital Epilepsy Clinic. Aspects considered include the classification of myoclonic epilepsy, clinical manifestations, electroencephalographic findings, diagnoses, etiology, prognoses, and treatment.

285. Lockwood, Gary F., and Newman, Robert L.: "Estriol Determination in Random Urine Samples," *Obstetrics and Gynecology*, 43:343-346, March, 1974.

Reviewed were results from a 16-month period over which 662 urinary estriol determinations were obtained from 132 high-risk patients. All of the patients had three or more serial estriol analyses performed by rapid gas chromatography. Findings indicated that 96 patients displayed normal estriol values and all

delivered viable infants. Abnormal estriol values were displayed in 36 patients. Findings in these 36 cases are described. The following conclusions are presented: "Random urinary estriol determinations as performed in our institution are accurate, reliable, rapid, and give excellent clinical correlation. All high-risk pregnancies warrant estriol studies, with specimen sampling beginning with the 32nd gestational week. Subsequent estriol determinations should be made as required by the individual patient's degree of risk; minimally, weekly determinations are indicated, with daily estriol studies reserved for the more threatened patient. A value of less than 10 mg estriol/g of creatinine after the 32nd gestational week, or a 50% drop from the previous recent estriol study, demonstrates fetal jeopardy and indicates that aggressive obstetric management is required."

286. Lockwood, Gary F., and Newman, Robert L.: "Estriol Determinations in Gestational Diabetes," *Obstetrics and Gynecology*, 44:642-645, November, 1974.

Reviewed were the cases of 54 gestational diabetic pregnant patients who had had three or more serial estriol determinations performed. Nine of these 54 patients were found to have displayed abnormal estriol levels, and all nine had an additional complication of pregnancy. All infants were live-born. Estriol values in the other 45 patients were similar to those of normal patients. "It is concluded that estriol assays should be performed on all gestational diabetic patients and that they are of value as an adjunct to the management of the gestational diabetic patient."

287. Lopez-Llera, Mario, and Horta, José Luis Hernandez: "Pregnancy After Eclampsia," *American Journal of Obstetrics and Gynecology*, 119:193-198, May 15, 1974.

Some 110 women who had had eclampsia with convulsions in Mexico were followed prospectively during their subsequent pregnancies. The women were divided into three groups "depending on the gestational amenorrhea at which convulsions took place." The following parameters were studied in the eclamptic and subsequent pregnancy of the women: "perinatal death, average amenorrhea, fetal weight, incidence of retarded fetal growth (RFG), frequency and severity of recurrent toxemia, weight gain during pregnancy, and method of delivery." Results indicated that "subsequent pregnancies tended to end before term, with 22.0 per cent of growth retarded fetuses, and repeating some degree of toxemia in 35.4 per cent of the cases. These tendencies were considerably more evident in the group of early eclampsia and the differences were highly significant statistically." Findings are discussed and conclusions are presented. "It was suggested that the most significant characteristic of prognostic consequences for the future pregnancies of eclamptic patients was the timing of convulsions in regard to the length of pregnancy. This parameter may signal the presence of previous underlying disease and may parallel the importance of the basic defects."

288. Lorber, J.: "Personal Method of the Treatment of Haemophilus Influenzae Meningitis in Children," *Neuropädiatria*, 5:353-357, November, 1974.

The author describes the method of treating this disease as practiced at the Department of Child Health, University of Sheffield, England. Aspects considered include diagnosis, antibacterial treatment, correction of dehydration and of

electrolyte balance, prevention and treatment of convulsion and complications, and follow-up assessment. "The treatment described differs from that generally used, particularly perhaps by American paediatricians. The main differences are the routine use of early intrathecal therapy, the reluctance to use routine and prolonged intravenous fluid treatment and the relatively short duration of treatment."

289. Lovell, Keith E.: "The Effect of Postmaturity on the Developing Child," *Medical Journal of Australia*, 60-I:13-17, January 6, 1973.

Studied neonatally and during the first year of life were 116 postmature infants. Some 77 of these infants had gestations of 42 to 43 weeks, and 39 had gestations longer than 43 weeks. Each infant was matched with a control infant for comparative study. In the postmature population "the incidence of foetal distress was high, the infant was more likely to be asphyxiated at birth and a significant proportion of babies exhibited abnormal neurological signs during the first few days of life." At one year of age the infants were examined and tested regarding their "social competence." These test results indicated that "as a group, the postmature babies showed a significantly increased proportion of low scores compared with the controls ($P < 0.001$)." "With subdivision according to the degree of postmaturity, there was a highly significant increase in the more postmature group ($P < 0.001$)." Other findings are presented, results are discussed, and conclusions are given.

290. Low, J.A., and Galbraith, R.S.: "Pregnancy Characteristics of Intrauterine Growth Retardation," *Obstetrics and Gynecology*, 44:122-126, July, 1974.

Studied regarding gestational age and weight were the newborns from 3428 sequential deliveries. In these 3428 deliveries there were 182 intrauterine growth retarded (IUGR) infants (5.3%). Obstetric records were reviewed and interviews were conducted with the IUGR group. "The perinatal mortality in the IUGR infants was three times that of the total population. Forty-eight percent of the obstetric patients in the IUGR group demonstrated no evidence of an obstetric, gestational, or significant maternal medical complication." Thus 52% of the IUGR group had one or more complications. These complications were categorized into the above classifications. "An increased risk of IUGR was most evident in the patient with severe preeclampsia, chronic hypertensive vascular disease, or chronic renal disease; to a lesser degree, it was evident in patients with a history of an IUGR infant in a previous pregnancy, twin pregnancy, antepartum hemorrhage, mild preeclampsia, postdate pregnancy, or developmental abnormalities."

291. Lubchenco, Lula O.; Bard, Harry; Goldman, Alan L.; Coyer, William E.; McIntyre, Clarence; and Smith, Dolores M.: "Newborn Intensive Care and Long-Term Prognosis," *Developmental Medicine and Child Neurology*, 16:421-431, August, 1974.

A group of low birthweight children and two control groups of children, who had been born between July, 1963, and July, 1965, at the University of Colorado Medical Center were retrospectively followed-up as described at approximately four years of age. Handicaps were defined by degree and are detailed in charts. "Children

who were born pre-term, with birthweights appropriate-for-dates, were found to have approximately the same incidence of handicap as children who were born at term but were small-for-dates. Furthermore, pre-term infants who were cared for in the intensive care nursery and given intravenous fluid therapy during the first hours after birth had fewer handicaps than those cared for in the regular nursery or those in the intensive care nursery who received only oral feedings. Intravenous fluid therapy was considered to be an index of the degree of intensive care. Children who weighed more than 2500 g at birth but whose gestations were less than 38 weeks were found to have a high incidence of central nervous system handicaps." Implications are considered.

292. Lund, H.T.; Gudum, J.; and Kop, V.: "The 'Blue' Meter, A Photometer Designed to Measure Light Emission During Phototherapy of Hyperbilirubinaemia," *Acta Paediatrica Scandinavica*, 63:89-91, January, 1974.

Explained in this article are the theory of operation, the description, and the specifications of such a meter. "The spectral response of the meter is matched to the action spectrum of bilirubin photo-oxidation, corrected for skin attenuation."

293. Lund, H.T., and Jacobsen, J.: "Influence of Phototherapy on the Biliary Bilirubin Excretion Pattern in Newborn Infants with Hyperbilirubinemia," *Journal of Pediatrics*, 85:262-267, August, 1974.

Fifteen newborns with hyperbilirubinemia and no signs of isoimmunization were studied regarding the concentration of total and unconjugated bilirubin in the duodenal bile. Two bile samples were obtained from each of these infants with ten infants receiving phototherapy as described for the 24 hours between the obtaining of the two samples, while the other five infants served as controls and received no phototherapy. Phototherapy was found to have "significantly altered the biliary bilirubin pattern; more bilirubin was excreted as unconjugated bilirubin during phototherapy and the color of the bile changed from pure yellow to dark brown." This color change is illustrated in a photo, and findings are discussed.

294. Lund, H.T., and Petersen I.: "Beta-Glucuronidase in Duodenal Bile of Jaundiced Newborn Infants Treated with Phototherapy," *Journal of Pediatrics*, 85:268-270, August, 1974.

Ten newborns with hyperbilirubinemia and no signs of isoimmunization were studied regarding the concentration of beta-glucuronidase in the duodenal bile. Two bile samples were obtained as described from each of these infants with five of the infants receiving phototherapy for the 24 hours between the obtaining of the two samples, while the other five infants served as controls and received no phototherapy. "No significant difference in beta-glucuronidase activity was observed between treated and untreated infants, but a significant decrease in the mean enzyme activity in the second bile sample was observed in the total number of infants." Findings are discussed.

295. Lunt, Rosemary M., and Chard, T.: "Reproducibility of Measurement of Fetal Biparietal Diameter by Ultrasonic Cephalometry," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:682-685, September, 1974.

Ultrasonic measurement of the fetal biparietal diameter was conducted twice, 15 minutes apart as described in each of 129 patients at from 12 to 40 weeks of pregnancy. The error in measurement was calculated and was found to be significantly greater in fetal heads that were less than 59 mm. or more than 83 mm. "It is concluded that the technique is of greatest value between the 23rd and 31st weeks. After the 31st week the error increases rapidly until at term it is equivalent to 12 days' average growth." These findings and those of other studies in this area are discussed, and "improvements are suggested which may increase the clinical value of the estimates at all stages of pregnancy."

296. MacCarthy, Dermod: "Communication Between Children and Doctors," *Developmental Medicine and Child Neurology*, 16:279-285, June, 1974.

"The author gives a personal view on communication between paediatricians and child patients, and discusses ways in which this special relationship might enhanced." Topics considered include talking to the child or parents separately and the importance of non-verbal communication between doctor and child when the child is not cooperative. Case reports are presented.

297. McCorry, R.L.; Mollan, R.A.B.; and Neely, M.R.: "A Clinical Trial of the Values of Serum Heat Stable Alkaline Phosphatase Estimates in Predicting the Occurrence of Pre-eclampsia," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:701-705, September, 1974.

Serial heat stable alkaline phosphatase (HSAP) levels were estimated in the serum of 396 patients beginning at 20 weeks gestation and continuing throughout pregnancy as explained. Methods of estimation are described. The levels of HSAP "were found to offer no guidance in the prediction of the occurrence and severity of pre-eclamptic toxaemia."

298. McCracken, George H., Jr., and Sarff, Larrie D.: "Current Status and Therapy of Neonatal E. Coli Meningitis," *Hospital Practice*, 9:57-64, October, 1974.

The investigations and findings of the Cooperative Neonatal Meningitis Study (CNMS), which was organized in 1971, are explained. There are 18 listed hospitals participating in the Study. "Not so long ago, it seemed predetermined that an infant with meningitis due to a gram-negative organism was an almost hopeless risk. Our data suggest that initiation of intrathecal therapy combined with parenteral drug at the time of diagnosis significantly lowers the mortality rate. Furthermore, identification of the K1 antigen of E. coli as a virulence factor for neonates with meningitis provides an important clue for our understanding of the epidemiology, pathogenesis, and possible future prevention of neonatal E. coli disease."

299. McCrann, Donald J., Jr., and Schifrin, Barry S.: "Fetal Monitoring in High-Risk Pregnancy," *Clinics in Perinatology*, 1:229-252, September, 1974.

Included among the topics discussed are fetal cardiotachometry, the diagnosis and treatment of acute fetal distress, fetal blood sampling, antepartum monitoring, and fetal stress testing. Also briefly considered are the fetal and maternal complications of these monitoring procedures.

300. MacDonald, James D.; Blott, Judith P.; Gordon, Kathleen; Spiegel, Bernard; and Hartmann, Marianna: "An Experimental Parent-Assisted Treatment Program for Preschool Language-Delayed Children," *Journal of Speech and Hearing Disorders*, 39: 395-415, November, 1974.

Three experimental and three control children, 3 to 5 years of age and all with Down's syndrome, were subjects in an experimental program, the methods and results of which are presented. "The program applied the Environmental Language

Intervention Strategy to effect a generalized functional language in children who primarily were capable of only single-word utterances. The major objective was to increase utterance length and grammatical complexity." There were two phases to the program. Phase I, lasting two months, took place in a clinical setting and at home with professionals and the mothers of the children as the language trainers. Phase II, lasting three months, took place in the home with only parents as language trainers. "Results from the two-month stage indicated marked increases in utterance length and grammatical complexity in imitation and conversation for all experimental subjects but negligible changes for the controls. Follow-up assessment indicated continued language increments for the experimental subjects" in Phase II of the program. Various aspects of the program are discussed, and success is also reported when the program was repeated with the control subjects.

301. McKee, James I.: "Wheelchair Transfer to Swimming Pool," *Physical Therapy*, 54: 1308, December, 1974.

A mobile home step unit, covered with a rug, is pictured, and its use by paraplegic patients to aid in the entering and leaving of a swimming pool is described.

302. MacMillan, C.A.: "Physiotherapy for the Handicapped in the Community," *Physiotherapy*, 60:230-231, August, 1974.

The theory of care and the services offered to the handicapped child, the disabled adult, and the geriatric patient in two Scottish countries with a total population of 150,000 are described.

303. Mangurten, Henry H., and Ban, Ronald: "Neonatal Hypotonia Secondary to Transplacental Bromism," *Journal of Pediatrics*, 85:426-428, September, 1974.

Presented is the case report of a newborn infant having hypotonia and neurologic depression. The mother was found to have taken a liquid bromide mixture as described prior to delivery. Recommended treatment is explained.

304. Mann, Leon I.; Tejani, Nergesh A.; and Weiss, Robert R.: "Antenatal Diagnosis and Management of the Small-for-Gestational Age Fetus," *American Journal of Obstetrics and Gynecology*, 120:995-1004, December 1, 1974.

The system of classifying neonates as average for gestational age (AGA), large for gestational age (LGA), and small for gestational age (SGA) is explained. Studied were 45 pregnancies that resulted in the delivery of 48 SGA infants. In 12 of these pregnancies the diagnosis of SGA had been made antenatally (diagnosed group), and in 33 pregnancies (36 infants) the diagnosis had not been made antenatally (undiagnosed group). Described in detail are the clinical and laboratory criteria upon which these neonates were diagnosed as SGA. Information is also presented on the methods of intrapartum fetal monitoring used and the neonatal courses and perinatal mortality in these cases. Factors discussed include the importance of antenatal diagnosis of SGA, difficulties in making such a diagnosis, and management after the diagnosis has been made.

305. Martin, Chester B., Jr.; Siassi, Bijan; and Hon, Edward H.: "Fetal Heart Rate Patterns and Neonatal Death in Low Birthweight Infants," *Obstetrics and Gynecology*, 44:503-510, October, 1974.

Reviewed were the maternal and neonatal hospital charts and the fetal heart rate (FHR) records from 73 live-born infants who weighed 2,000 g. or less at birth. The FHR records were "classified according to the most abnormal FHR pattern present" and also according to the baseline heart rate level as described. Summarized in tables and graphs are the neonatal outcomes of these infants according to gestational age, birthweight, FHR patterns, baseline FHR, and baseline FHR variability. "The total incidence of respiratory distress syndrome (RDS) and the proportion of neonatal deaths from RDS were increased in the group of subjects who had shown late or severe variable deceleration FHR patterns during labor. There was also a significant increase in RDS deaths among infants who had shown decreased variability (0-5 beats/min) of the baseline FHR and in the small group of subjects with marked tachycardia (over 180 beats/min). The neonatal mortality from all causes, and specifically from RDS, was especially high among the subjects showing both ominous periodic FHR patterns and reduced baseline variability. The association between abnormal FHR findings and death from RDS was limited to infants of less than 35 weeks' gestational age at birth, and was not observed with older low birthweight subjects." These findings are discussed.

306. Martin, Edwin W.: "Some Thoughts on Mainstreaming," *Exceptional Children*, 41:150-153, November, 1974.

The "mainstreaming" of handicapped children is the integration of these children into the regular settings in our society and in our educational system in particular. Dr. Martin discussed the reasoning behind mainstreaming and the barriers and problems involved. These problems include the need of regular classroom teachers for specialized training in the education of handicapped children, the need for effective planning, and the need for evaluation of the child's progress.

307. Marx, Gertie F.: *Clinical Anesthesia: Parturition and Perinatology.* Philadelphia: F.A. Davis, 1973. 216 pp. (Clinical Anesthesia Series, Volume 10, No. 2.)

This monograph contains 15 chapters by numerous contributors from the fields of obstetrics, perinatology, and anesthesiology on topics relating to clinical anesthesia in parturition and perinatology. Aspects considered include maternal respiratory and cardiovascular dynamics during pregnancy and parturition, the initiation of labor, biochemical and biophysical fetal monitoring, and the maternal and fetal acid-base balance during labor. Also included are chapters dealing with the effects on the fetus and neonate of analgesia during labor, barbiturates in newborn animals, the use of thiobarbiturates in obstetric anesthesia, the clinic implications of placental transfer of local anesthetics, anesthesia for elective cesarean section, and the thermal care of the newborn. Reference lists follow each chapter, and there is a subject index to the volume.

308. Massaro, Thomas F.; Levitsky, David A.; and Barnes, Richard H.: "Protein Malnutrition in the Rat: Its Effects on Maternal Behavior and Pup Development," *Developmental Psychobiology*, 7:551-561, November, 1974.

An experiment is described in which mother rats were fed either a low (experimentals) or a high (controls) protein diet throughout the period of lactation. Time-lapse photography was used to repeatedly observe the effects of the malnutrition on the behavior of the dams and the behavioral development of the pups. Photographic negatives were observed and rated using a described behavioral classification system. Findings indicated the body weights of the experimental dams to be significantly lower than the controls, and the growth of the malnourished pups during lactation was "considerably depressed." "Dams fed the low-protein diet were observed to spend more time in the nesting area with their pups than dams fed the high-protein diet. Locomotor activity of the dams did not differ between the two groups. The behavioral development of the pups suckling the dams receiving the low-protein diet was markedly depressed as compared with the controls. Included in this latter observation were, pup behaviors such as movement from the nesting area, feeding and drinking from available supplies, and rearing and climbing activity. The results indicate that feeding a low-protein diet to a lactating dam results in behavioral changes in both the dam and pups that tend to minimize the exposure of the pups to the immediate environment." Implications are considered. "These results, then, raise the possibility that many of the long-term behavioral effects observed to result from early malnutrition may not be caused by permanent neurological and biochemical damage to the central nervous system due to nutritional deprivation but may stem from a disturbance in the learning experience during this sensitive period of development."

309. Massi, G.B.; Mello, G.; Curiel, P.; and Carapella, Erminia: "Low Dosage Anti-D Immunoglobulin in the Prevention of Rhesus Isoimmunization," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:87-89, January, 1974.

Several problems still remaining concerning the use of anti-D immunoglobulin in the treatment for the prevention of rhesus isoimmunization are discussed. A dose of 100 to 125 μg. of anti-D immunoglobulin was administered to 838 rhesus negative mothers following the delivery of a rhesus positive infant. A Kleihauer test on these patients "showed either no fetal cells or suggested a transplacental haemorrhage (TPH) of less than 0.25 ml." Of these 838 patients, 523 were tested at six months after delivery with only one woman found having anti-D antibodies. This patient had a subsequent pregnancy and delivered a rhesus positive infant. Of the other 523 patients, 60 had subsequent pregnancies, delivering rhesus positive infants. "None developed anti-D antibodies and all children were unaffected by rhesus isoimmunization. A dose of 100 to 125 μg. of anti-D immunoglobulin proved effective in reducing rhesus isoimmunization in rhesus negative women with minimal TPH but since a large TPH is rare, such a dose is probably sufficient in 98 per cent of cases."

310. Matthews, C.D., and Martin, M.R.: "Early Detection of Meconium-Stained Liquor During Labor: A Contribution to Fetal Care," *American Journal of Obstetrics and Gynecology*, 120:808-811, November 15, 1974.

A survey was conducted of 1,319 consecutive patients admitted to a labor ward, excluding those who were to have elective cesarean section, regarding the presence of meconium-stained liquor. These cases, with the exception of 198 who were not assessed on admission for reasons given, were assessed by the spontaneous rupture of the membranes amniotomy, or amnioscopy. As a result of this assessment, meconium staining of the liquor was detected early in 79 of the 1,319 cases, "and in seven of these the fetus proved to be already acidotic. The early detection of meconium staining of the liquor has proved a valuable adjunct to the prompt recognition of the acidotic fetus, the selection of cases for intensive fetal monitoring, and the reduction of intrapartum asphyxial damage."

311. Meisels, Alexander, and Schneider, Volker: "Hormonal Cytology," *Clinics in Perinatology*, 1:53-63, March, 1974.

The obtaining and reading of the cytohormonal smear are discussed with cytohormonal patterns seen in premature delivery, fetal death, fetal distress, postmaturity, pregnancy complications, and pregnancy at term described. The cytologic diagnosis of ruptured fetal membranes is also considered. "Hormonal cytology is a simple, economical, easy to repeat test which offers the perinatologist useful information concerning the function of the fetoplacental unit. It is of special interest as an alarm signal for fetal distress and may offer guidance in the management of postmaturity."

312. Merkatz, Irwin R.; Aladjem, Silvio; and Little, Brian: "The Value of Biochemical Estimations on Amniotic Fluid in Management of the High-Risk Pregnancy," *Clinics in Perinatology*, 1:301-319, September, 1974.

The literature is reviewed relative to the value of biochemical estimations of amniotic fluid to access fetal maturity, fetal growth, fetal asphyxia and acidosis, fetal anomalies, and rhesus isoimmunization. Also considered are studies dealing with the "fluid dynamics and volumetric changes" in amniotic fluid, the osmolality of amniotic fluid, and "the use of amniotic fluid hormones in fetal evaluation."

313. Merola, Joseph C.L.; Johnson, Lois M.; Bolognese, Ronald J.; and Corson, Stephen L.: "Determination of Fetal Pulmonary Maturity by Amniotic Fluid Lecithin/Sphingomyelin Ratio and Rapid Shake Test," *American Journal of Obstetrics and Gynecology*, 119:243-252, May 15, 1974.

Amniotic fluid specimens were obtained from 146 patients who were between 26 to 43 weeks gestation and who had such complications of pregnancy as diabetes mellitus, toxemia, Rh isoimmunization, postmaturity, or dysmaturity. From these samples 176 lecithin/sphingomyelin (L/S) determinations and 92 rapid shake tests (ST) were performed. Results are presented regarding the L/S ratio and the ST results in relation to gestational age, the L/S ratio in comparison to the ST results, the development of RDS in six infants in this series and their L/S and ST

results, the instance of "less-than-mature values," and the individual linear relationships seen between the results of the tests and gestational age in cases of diabetes mellitus, toxemia of pregnancy, Rh isoimmunization, and dysmaturity or postmaturity. Findings indicated that both the L/S ratio and the rapid shake test are reliable indicators of neonatal pulmonary maturity; however, "caution should be exercised when interpreting tests of fetal pulmonary maturity in problem pregnancies."

314. Messner, Sherwood A., and Haynes, Una: "Cerebral Palsy," in *Rehabilitation Practices with the Physically Disabled*, edited by James F. Garrett and Edna S. Levine. New York: Columbia University Press, 1973. Pp. 240-293.

After explaining the definitions, classifications, nomenclature, prevalence, early identification, and preventive implications of cerebral palsy, the authors discuss the various services needed by cerebral palsy patients and their families. These include medical and dental care, school services, and services for the adult patient. Then considered are the "trends and issues in the organization and delivery of services," including residential facilities for the cerebral palsied, architectural design of facilities, the "Information, Referral, and Follow-Along Service" concept of United Cerebral Palsy Associations, services for infants and their families, and the planning of services. The multidisciplinary, interdisciplinary, and 'cross-disciplinary' types of service are differentiated, current areas of research and agencies involved in research relating to cerebral palsy are described, and organizations related to the problem of cerebral palsy are listed. Following the bibliography, "a Chart of Program Services" is presented which "is a listing of more than one hundred types of services which may be needed at one time or another by individuals with cerebral palsy and their families, or by the community in dealing with the disabling condition."

315. Middough, Lawrence D.; Blackwell, L. Ann; Santos, Carroll A., III; and Zemp, John W.: "Effects of d-Amphetamine Sulfate Given to Pregnant Mice on Activity and on Catecholamines in the Brains of Offspring," *Developmental Psychobiology*, 7:429-438, September, 1974.

Other studies on the teratogenic and behavioral effects on offspring of psychoactive drugs given during pregnancy are reviewed. Two experiments were conducted "to determine if injecting pregnant mice with d-amphetamine sulfate would produce changes in activity and in concentrations of CA [catecholamines] in the brains of their offspring." In Experiment 1 pregnant rats were placed in 1 of 3 groups: the drug group received d-amphetamine sulfate as described the last 6 or 7 days of pregnancy, the saline control group received a saline injection instead of the drug for the same period of time, and an untreated control group received no injection. Offspring were reared by their mothers until weaning, and were killed at various times from birth until age 30 days for biochemical studies. Locomotor activity was also tested in these 3 groups. The drug group of offspring were found to have "slightly reduced body weight at birth, altered concentrations of catecholamines (CA's) in their brains during development, and increased activity after they had matured. Norepinephrine concentrations were depressed at birth, returned to control values by Day 3, and were elevated at 21 and 30 days after birth. Dopamine values were elevated at 30 days after birth." The groups were not significantly different on activity measures. In

Experiment II mice were treated identically to the 3 groups in Experiment I. The mice were tested at age 75 days on 3 types of activity: locomotion, rearing, and grooming, and were then killed for brain study. This experiment was conducted "to determine if the altered CA concentrations noted in young mice prenatally exposed to amphetamine were transient or permanent and if the effects of amphetamine and saline on activity could be differentiated at older ages." "At 75 days of age, animals prenatally exposed to the drug had CA concentrations similar to the controls, but had heightened activity levels compared to controls tested in the open field. The results of these experiments demonstrate that d-amphetamine sulfate administered to mice during the last third of pregnancy produce transient alterations in CA concentrations and long-lasting changes in behavior."

316. Miller, Herbert C., and Hassanein, Khatab.: "Maternal Factors in 'Fetally Malnourished' Black Newborn Infants," *American Journal of Obstetrics and Gynecology*, 118:62-67, January 1, 1974.

Studied and compared regarding neonatal and maternal factors were 33 consecutively born black term infants who were diagnosed as described as being 'fetally malnourished' (all had ponderal indices below the third percentile) and 135 consecutively born black term infants whose ponderal indices were between the tenth and ninetieth percentiles. "Maternal factors significantly associated with 'fetal malnutrition' included a poor maternal weight gain, little or no prenatal care, pre-eclampsia, and chronic major illness. Maternal factors that were not significantly associated with 'fetal malnutrition' were smoking, being on welfare, being unmarried, obesity, underweight, maternal age, and number of school years completed." Findings are discussed.

317. Milunsky, Aubrey, ed.: "Symposium on Management of the High-Risk Pregnancy," *Clinics in Perinatology*, 1:1-533, September, 1974.

Contained in this issue are the 21 articles by contributors to the above Symposium. Topics considered include the "influences of pregnancy risk factors on fetal and newborn disorders," "prenatal and perinatal factors in etiology and outcome of low birth weight," the "prenatal identification of the fetus at risk," and "fetal monitoring in high risk pregnancy." Other articles are concerned with specific high-risk pregnancy conditions including erythroblastosis fetalis, diabetes mellitus, heart disease, hypertension, sickle cell disease, tuberculosis, toxoplasmosis, urinary tract infection, and anemia. Also considered in separate articles are various means of managing high-risk pregnancies including the estimation of plasma estrogen and alpha-fetoprotein, radiologic techniques, and ultrasound. The risks to the neonate from obstetric anesthesia and "delayed disease as a consequence of fetal exposure to radiation, infection and exogenous hormones" are subjects of separate articles. Reference lists follow each article, and there is a cumulative subject index. Articles of particular pertinence to this bibliography are annotated individually.

318. Milunsky, Aubrey, and Alpert, Elliot: "The Value of Alpha-Fetoprotein in the Prenatal Diagnosis of Neural Tube Defects," *Journal of Pediatrics*, 84:889-893, June, 1974.

Alpha-fetoprotein (AFP) concentrations were measured as described in amniotic fluid samples from the following groups of pregnancies: 482 normal pregnancies in the second trimester, 43 patients at risk of having infants with neural tube defects, 24 patients who were monitored by prenatal genetic studies to identify hereditary or congenital fetal abnormalities, eight patients in whom fetal death had occurred, nine patients having significant obstetric complications, and 12 patients having fetuses with neural tube defects. Findings are presented for each group of patients, and other studies in this area are reviewed. "Although the specificity, validity, and applicability of AFP concentrations in amniotic fluid require further study, it is apparent that AFP estimations thus far represent the most significant advance in the early detection of these defects."

319. Modanlou, Houchang; Yeh, Sze-Ya; and Hon, Edward H.: "Fetal and Neonatal Acid-Base Balance in Normal and High-Risk Pregnancies," *Obstetrics and Gynecology*, 43:347-353, March, 1974.

Some 150 obstetric patients were divided into normal (Group 1-40 patients) and high-risk (Group 2-110 patients) groups after clinical evaluation. With methods described, biophysical and biochemical monitoring was conducted on the fetuses and neonates. The two groups were compared regarding the results of the monitoring and on a number of other factors. Findings are listed in the "Summary." "Biochemical monitoring revealed that during labor all patients showed a gradual fall in fetal pH and an increase in pCO_2 and base deficit, especially in the second stage of labor and during delivery. These biochemical changes were more marked in high-risk fetuses. At birth and during the first hour of life the neonates of high-risk mothers were more acidotic and recovered more slowly than neonates of normal mothers. It is concluded that the high-risk fetus does not tolerate the stress of labor as well as the normal. Biochemical and biophysical surveillance of the high-risk fetus may provide early warning of impending difficulties so that during labor timely intervention may be instituted."

320. Modanlou, Houchang; Yeh, Sze-Ya; Siassi, Bijan; and Hon, Edward H.: "Direct Monitoring of Arterial Blood Pressure in Depressed and Normal Newborn Infants During the First Hour of Life," *Journal of Pediatrics*, 85:553-559, October, 1974.

Studied were 150 neonates from described high-risk pregnancies. Direct systolic, diastolic, and mean arterial blood pressure was continuously monitored in these newborns for the first 64 minutes of life with data analyzed as described. The infants were divided into four groups on the bases of their 1 and 5 minute Apgar scores. "Blood pressures of depressed newborn infants at birth (Apgar scores 6 or less at 1 and 5 min.) were compared to those of normal newborn infants (Apgar scores 7 or greater at 1 and 5 min.). The former demonstrated generally higher systolic pressures during the first 16 min. and diastolic pressures at 4 min. when infants were compared by their 1 min. Apgar scores and higher diastolic pressures at 4 min. when the infants were compared by their 5 min. Apgar scores." Findings and hypotheses are discussed.

321. Moghissi, Kamran S., ed. *Birth Defects and Fetal Development; Endocrine and Metabolic Factors*. Springfield, Ill.: C. C. Thomas, 1974. 334 pp.

Presented in this volume are the proceedings of the VII Harold C. Mack Symposium held at Wayne State University in November, 1971. The 15 chapters are organized in three sections dealing with the "metabolic and nutritional factors affecting fetal growth and development," the "endocrine and environmental factors," and the "recognition, prevention and management of birth defects," respectively. Photographs and reference lists are numerous, and there are subject and author indexes.

322. Molnar, Gabriella E.: "Motor Deficit of Retarded Infants and Young Children," *Archives of Physical Medicine and Rehabilitation*, 55:393-398, September, 1974.

A prospective study was conducted on 53 infants and toddlers, ranging in age at the beginning of the study from 10 to 23 months, who were mentally retarded and developmentally delayed, but who were not neuromuscularly disabled. The children were followed for from 10 to 36 months. Methods of selection and assessment are described. Data was obtained, analyzed, and correlated on the following: "(1) Attainment of five gross motor milestones," "(2) Presence or absence of four selected infantile reflexes that should disappear in the course of normal development by the end of infancy," and "(3) Presence or absence of ten selected evoked movement responses that emerge during the first 18 months of life in a sequence linked to the achievement of certain motor milestones. These will be designated as postural adjustment reactions...." A 5 to 27 month delay in the appearance of these postural adjustment reactions was observed in these children. "Attainment of appropriate motor milestones followed the emergence of specific postural adjustment reactions within one month. Therefore, it is postulated that the motor deficit of retarded infants and young children is related to a disturbance in the evaluation of those postural reflex mechanisms that are prerequisites for the achievement of sitting and other gross motor activities." These motor development observations in mentally retarded children are contrasted to those seen in cerebral palsied children. Therapeutic implications of the findings of this study are considered.

323. Molnar, Gabriella E., and Alexander, Justin: "Development of Quantitative Standards for Muscle Strength in Children," *Archives of Physical Medicine and Rehabilitation*, 55:490-493, November, 1974.

Conclusions reached from previous studies by the authors in this area are listed. When 500 normal boys and girls were tested for muscle strength using a previously described isokinetic device, it was found "that normative values of quantitative muscle strength for children are related to age, height and weight of the subjects." Further statistical analysis was conducted with results reported. On the basis of the data, some prediction tables were developed. The study is continuing. "Bases on a study population of adequate size, it seems possible to present valid standards and to compute expected strength increments for the various groups of muscles and for boys and girls of different ages."

324. Molnar, Gabriella E., and Taft, Lawrence T.: "Cerebral Palsy," in *Mental Retardation and Developmental Disabilities; An Annual Review, Volume 5*, edited by Joseph Wortis. New York: Brunner/Mazel, 1973. Pp. 85-112.

The developmental disability of cerebral palsy is considered with regard to incidence, etiology, pathology, manifestations of the motor disability, treatment of the motor disability, associated disabilities, and the rationale for treatment. A bibliography consisting of 307 items is included.

325. Monster, A. Willem: "Spasticity and the Effect of Dantrolene Sodium," *Archives of Physical Medicine and Rehabilitation*, 55:373-383, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. The clinical term "spasticity" is considered and conditions which "might play a role in clinical spasticity" are listed. A double-blind crossover study is then reported in which patients, having spasticity from various causes were given either dantrolene sodium or a placebo for five weeks, followed by five weeks of receiving the other. Spasticity was measured objectively by explained methods, and findings during each period of treatment were compared to baseline testing results. Results were analyzed for 147 patients. "The data presented here indicated that measurable and substantial improvement occurred following dantrolene therapy. The OCR [overall clinical response] measurement of patient improvement (83%), ADL [activities of daily living] assessment (43%), and the reduction in clonus level (90%) were all indications of the positive effect that dantrolene sodium had on these patients; less than 10% performed worse on drug than on placebo by all of the above indices. This improvement was not limited to any one segment of the patient population studied, although differences were noted." "The unique properties of the drug, including effectiveness of oral administration, long duration of action, site of action outside the central nervous system, and limited incidence of side effects, make it of substantial benefit on controlling some of the disabling manifestations of clinical spasticity."

326. Monster, A. Willem; Tamai, Yasuhiko; and McHenry, J.: "Dantrolene Sodium: Its Effect on Extrafusal Muscle Fibers," *Archives of Physical Medicine and Rehabilitation*, 55:355-362, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. Studies are described in which experiments were conducted to measure "the effects of dantrolene sodium on contractile properties of muscle" and "to characterize further the site of action of dantrolene sodium on the excitation-contraction coupling processes." Conclusions are presented: "Substantial evidence from both human and animal studies indicates that dantrolene sodium has a direct effect on the contraction mechanism of skeletal muscle. This action, from indirect evidence, appears to be related to a decrease in the amount of Ca released from the sacrotubular system. This hypothesis in turn has been shown to be theoretically consistent with all the observed actions of dantrolene sodium on skeletal muscle. It is proposed that this action is responsible for its clinically observed muscle-relaxant activity."

327. Morgenstern, J.; Albrecht, H.; Bokelmann, J.; and Schmidt, H.: "Computed Dip-Parameters Derived from Digitized FHR-Curves. I. The Describing Parameters and the Method of Digitizing," *Journal of Perinatal Medicine*, 2:254-259, 1974. (Series: For II see #8; for III see #423.)

"A method of data processing for the derivation of descriptive cardiotocography (CTG) parameters for the areas of deceleration is described." Included in the presentation are the methods used for transferring analog CTG curves onto magnetic tape and the derivation of 30 descriptive parameters from the areas of deceleration of the fetal heart frequency. "The parameters of each area of deceleration are stored on magnetic tape together with identification data. These parameters are then analyzed statistically for further evaluation."

328. Moriarty, Richard W.: "Screening to Prevent Lead Poisoning," *Pediatrics*, 54:626-628, November, 1974.

The recommendations for screening children for lead poisoning which were reported in the Surgeon General's Report of 1970 are listed. This approach toward the screening of children to prevent lead poisoning is discussed as are the areas of controversy in this approach. The following questions are considered: "What is a safe level of lead exposure?...Is blood lead level the most salient indicator of the risk of ill effects?...What test should be used for screening?... What treatment is appropriate and what are the indications for treatment?... What circumstances put a child at risk of increased lead absorption?"

329. Morrison, J.C.; Morrison, D.L.; Lovett, F.A.; Whybrew, W.D.; Bucovaz, E.T.; Wiser, W.L.; and Fish, S.A.: "Nile Blue Staining of Cells in Amniotic Fluid for Fetal Maturity. Part I. A Reappraisal," *Obstetrics and Gynecology*, 44:335-361, September, 1974.

Because of the great variation in results by investigators regarding this method of evaluating fetal maturity, a prospective study was conducted "to delineate the possible factors involved in these variable results." Six brands of Nile blue dye were used to evaluate 40 samples of amniotic fluid from normal women at from 20 to 44 weeks of gestation. The samples were obtained just before delivery by amniocentesis. A pediatrician then determined the gestational age of the infants at birth as described, and the findings were correlated. The characteristics of the dyes used and the procedure of staining used are described. Of the six stains two gave acceptable results. Errors that can be made when using this method to assess fetal maturity are listed. "These include the type of stain, preparation of the staining solution, physical factors, and procedural errors." "It would appear that the choice of the dye may explain the paradoxical results presented by other studies."

330. Morrison, J.C.; Morrison, D.L.; Lovett, F.A.; Whybrew, W.D.; Bucovaz, E.T.; Wiser, W.L.; and Fish, S.A.: "Nile Blue Staining of Cells in Amniotic Fluid for Fetal Maturity. Part II. In Complicated Obstetric Cases," *Obstetrics and Gynecology*, 44:362-367, September, 1974.

The need for and methods used for the estimation of fetal maturity are discussed. Nile blue dye was used to stain cells in the amniotic fluid from 110 pregnant women within two days of delivery as described, and findings were correlated

with fetal maturity as determined by a pediatrician at birth, using birth weight, Dubowitz's criteria, and neonatal symptoms of the respiratory distress syndrome. Of these 110 women, 20 had normal pregnancies, 20 had raised amniotic fluid bilirubin levels, 40 had severe toxemia, and 30 had diabetes mellitus. Nile blue staining of cells in the amniotic fluid was found to be an accurate method for estimating fetal maturity in 108 of the 110 cases (98%). "In addition, this assay was not affected by the appearance of blood, meconium, or vaginal secretions in the amniotic fluid. The accuracy of other methods for detecting fetal maturity in the presence of fetomaternal disease and other variables is also discussed." It is concluded that this is a reliable method of estimating fetal maturity for three listed reasons.

331. Morrison, J.C.; Wiser, W.L.; Arnold, S.W.; Whybrew, W.D.; Morrison, D.L.; Fish, S.A.; and Bucovaz, E.T.: "Modification of the Lecithin/Sphingomyelin Assay for Fetal Development," *American Journal of Obstetrics and Gynecology*, 120:1087-1091, December 15, 1974.

Described is a modification of the method developed by Gluck for the lecithin/sphingomyelin assay used to assess fetal lung development. It is felt that this modified technique provides "for a rapid, sensitive, reproducible, and economical procedure for the determination of fetal maturity." Also reported are the positive results from usage of the method in 100 normal pregnancies.

332. Morrison, Richard L., and Ruh, Thomas S.: "A Method for Determination of Lecithin and Sphingomyelin in Amniotic Fluid," *American Journal of Obstetrics and Gynecology*, 118:493-495, February 15, 1974.

An alternative method to that of Gluck and associates is presented.

333. Morriss, Frank H., Jr., and Brumley, George W.: "Erythrocyte 2,3-Diphosphoglycerate Concentrations in Umbilical Venous Blood from Normal and Meconium-Stained Neonates," *American Journal of Obstetrics and Gynecology*, 119:988-990, August 1, 1974.

Studied were the erythrocyte 2,3-DPG levels in 17 term neonates of whom ten showed no evidence of meconium passage in utero (controls) and seven showed "meconium staining of the skin, amniotic fluid, and/or the placenta" (study group). Findings indicated that the study group of infants had lower erythrocyte concentrations and higher hematocrits than did the control infants. "The relationship to intrauterine hypoxia is discussed."

334. Mueller-Heubach, Eberhard: "Amnioscopy," *Clinics in Perinatology*, 1:81-86, March, 1974.

Considered here are the technique, indications, results, and complications of amnioscopy.

335. Mukherjee, Trishit K.; Rajegowda, B.K.; Glass, Leonard L.; Auerbach, J.; Evans, Hugh E.: "Amniotic Fluid Shake Test Versus Lecithin/Sphingomyelin Ratio in the Antenatal Prediction of Respiratory Distress Syndrome," *American Journal of Obstetrics and Gynecology*, 119:648-652, July 1, 1974.

In order to assess fetal pulmonary maturity, amniotic fluid samples were obtained in the last trimester of pregnancy from 98 patients who had various complications of pregnancy. The L/S ratio was determined and the shake test was performed. "The shake test proved to be a useful tool in assessment of fetal pulmonary maturity. The L/S ratio, although mostly corroborative with the clinical picture of the babies, sometimes shows higher or lower levels than expected depending on the clinical condition of the mother."

336. Munro, Hamish N.: "Leukocytes and Fetal Malnutrition," *Pediatrics*, 51:926-928, May, 1973.

Research in this area is reviewed.

337. Munro, Sheila I.: "Godfrey Standing Aid," *Physiotherapy*, 60:385-386, December, 1974.

This device is described and pictured. "This equipment helps the patient get to and from a standing position, and while he is standing to do exercises or simple tasks."

338. Murphy, J., and Hodson, W.A.: "Neonatal Intensive Care. 1. Regional Needs and Planning," *Postgraduate Medicine*, 56:55-58, July, 1974.

In Part I of this article a system of regional neonatal care is proposed in which there are three levels of care. This plan is diagramed and described. In Level I are the small urban and rural hospitals serving maternity and neonatal patients having no complications. In Level II is a general hospital equipped to care for most maternity and neonatal complications. In Level III is a hospital containing "the neonatal ICU in addition to an intermediate newborn care and a normal newborn care nursery." Levels I and II refer certain high-risk maternity and neonatal cases to this center. It serves "as a referral center for a region having at least 10,000 to 15,000 deliveries per year." Other aspects of the plan considered include the estimating of the neonatal ICU potential patient load, the transporting of patients, and the neonatal ICU staff. "In planning a neonatal ICU, the chief consideration should be to reduce neonatal mortality and morbidity. The regional organization of neonatal intensive care units provides specialized personnel and facilities to meet community needs efficiently and economically."

339. Murphy, J., and Hodson, W.A.: "Neonatal Intensive Care. 2. Design and Function of a Special Unit," *Postgraduate Medicine*, 56:65-70, July, 1974.

Equipment and personnel requirements of a neonatal intensive care unit are described. Specific aspects considered are the monitoring equipment; ventilation, including monitoring and assistance; physiologic factors, including acid-base balance, apnea, blood pressure, temperature, and metabolic problems; and convalescence.

340. Myers, R.E.; Valerio, Marion G.; Martin, D.P.; and Nelson, Karin B.: "Perinatal Brain Damage: Porencephaly in a Cynomolgous Monkey," *Biology of the Neonate*, 22:253-273, 1973.

Described in detail is the case of a monkey who exhibited clinical signs of severe brain damage after birth, including being blind, partially deaf, and having severe motor disability. "This case is herein described because its brain lesions closely resemble porencephaly as it occurs in the human. Also, the distribution and the tissue characteristics of its brain pathological process conform in general with those observed in monkeys subjected to experimentally controlled episodes of partial asphyxia. These similarities in the pathological processes in the two instances permit inferences as to the pathogenesis of the lesion (porencephaly) itself." The clinical history and the neurological examination findings are presented. At 1 1/2 years of age the monkey was sacrificed along with two other monkeys of the same species and exact age. The damaged and control animals were thus compared with necropsy findings and gross and microscopic brain findings reported. Results are discussed.

341. Myrianthopoulos, Ntinos C., and Chung, Chin S.: *Congenital Malformations in Singletons: Epidemiologic Survey*. New York: Stratton Intercontinental Medical Book Corp., 1974. 58 pp. (Birth Defects: Original Article Series, Volume XI, Number 11.)

"This report is the first of a series on a comprehensive study of congenital malformations which occurred in children born in the Collaborative Study of Cerebral Palsy, Mental Retardation and Other Neurological and Sensory Disorders of Infancy and Childhood (Collaborative Perinatal Project.)" The malformations studied were from a population of 53,349 consecutive single births including 1,881 fetal and neonatal deaths. Criteria of the study are explained, and terms are defined. Findings are presented and discussed regarding the incidence and general distribution of the malformations found in this population; the malformations detected at birth and during the first year of life; the distribution of malformations by classes of major and minor, single and multiple, and by system; the malformations detected in live births, fetal deaths, and later deaths; sex differences; racial differences; and variablity among the 12 institutions from which data were obtained. Results are summarized, references are listed, and an appendix contains a lengthy and detailed table on the "distribution of congenital malformations in singletons by race and sex."

342. Naeye, Richard L., and Blanc, William A.: "Influences of Pregnancy Risk Factors on Fetal and Newborn Disorders," *Clinics in Perinatology*, 1:2:187-195, September, 1974.

A multivariate analysis was conducted to determine the effects of numerous fetal and maternal factors on the incidence of fetal and neonatal disorders. Material was examined from 783 consecutive autopsies on newborn infants. Of these 783, there were 513 liveborn infants and 270 stillborn infants. Several tables are included in which data is presented to show relationships determined. Of significance was the fact that "an increased incidence of the amniotic fluid infection syndrome was associated with several high risk maternal factors. Maternal toxemia of pregnancy played a lesser role in these same high risk gestations."

343. Nakamura, Junichi, and Roux, Jacques F.: "Determination of Amniotic Fluid Phospholipids for the Diagnosis of Fetal Maturation," *American Journal of Obstetrics and Gynecology*, 119:104-110, May 1, 1974.

Amniocentesis was performed on 111 high risk and normal patients within 48 hours of delivery and at various periods of gestation. Determined were "the L/S ratio, the concentration of phospholipids, lecithin, phosphate in total lipids, creatinine, and the foam test." The surface tension of the amniotic fluid was determined using two different described methods. "Each test, with the exception of the angle of intersection and the concentration of phosphate in total lipids, correlates significantly with gestational age and with the L/S ratio of Gluck and Kulovich." "From the data it is concluded that the determination of amniotic fluid creatinine concentration and the use of the foam test provide fast, cheap, and reliable information when the tests are positive for maturation." These and other findings are discussed by Drs. John T. Queenan, Clarence R. McLain, Jr., L. C. Powell, Jr. 3, Frank H. Boehm, and Roux.

344. Nakamura, Junichi; Roux, Jacques F.; Brown, Edwin G.; and Sweet, Avron Y.: "Total Lipids and the Lecithin - Sphingomyelin Ratio of Amniotic Fluid: An Antenatal Test of Lung Immaturity?" *American Journal of Obstetrics and Gynecology*, 113:363-366, June 1, 1972.

Total lipid concentration was measured, and the L/S ratio was determined as described within 24 hours of delivery in 90 pregnancies, ranging between eight and 46 weeks of gestation. "The data show that the L/S determined by two-dimensional thin-layer chromatography and the concentration of total lipids are each reliable indicators of gestational age but not of lung maturity."

345. Nazzaro, Jean: "Head Start for the Handicapped; What's Been Accomplished," *Exceptional Children*, 41:103-107, October, 1974.

Reported here are some of the developments which have occurred since handicapped children were legislatively included in the Head Start program in 1972. The report of HEW in April, 1974, to the Congress on the services provided to handicapped children and the numbers of handicapped children served in Project Head Start is discussed as is the response to the report made by Congress in May, 1974. A problem in classification was seen to have developed in reports made by

HEW over the terms "handicapping conditions" and "handicapped." This problem of labeling and improper classification of children is discussed and orders made by the Congress to eliminate classification discrepancies are listed. Then considered is the "Syracuse Report," "An Interim Report on the Assessment of Handicapped Effort in Experimental and Selected Other Head Start Programs Serving the Handicapped," which was prepared at Syracuse University by the Division of Special Education and Rehabilitation and submitted to the Office of Child Development in February, 1974. "The report reflects a sensitivity to the problems encountered by Head Start staff, which goes beyond the political-bureaucratic battles taking place in Washington." The dangers of labeling children as handicapped, the problem of including the severely handicapped child in Head Start, the feeling by the Syracuse staff that the claim of 10% of all children are handicapped is too high, the involvement of parents of handicapped children in Head Start, and the need of specialized training for the staff to handle handicapped children are among the factors of concern stated in this report. Following this article the Head Start Information Project of the Council for Exceptional Children is explained, including its purposes, accomplishments, services, and activities. "The Head Start Information Project (HIP) develops resources and provides training for Head Start personnel working with handicapped children."

346. Needleman, Herbert L.; Davidson, Isobel; Sewell, Edward M.; and Shapiro, Irving M.: "Subclinical Lead Exposure in Philadelphia Schoolchildren; Identification by Dentine Lead Analysis," *New England Journal of Medicine*, 290:245-248, January 31, 1974.

The lead levels were determined in the dentine of shed deciduous teeth from 761 school children in Philadelphia. These children lived in two school districts, one of which was considered to be at high risk for lead exposure while the other district was low risk. Most of the children in the high risk district were black. Findings indicated distinct differences in dentine lead levels between the children in the two districts. "Black children in public schools from areas of deteriorated housing had marked elevations of dentine lead (mean of 198 μg per gram, in 174 children), with 20 per cent of the children having levels in the range associated with toxicity. White children from newer housing had the lowest levels (mean of 41.7 μg per gram, 304 children), but a group of white children from intact housing living near and attending school adjacent to a major lead processor also had elevations of dentine lead (mean of 136 μg per gram, 71 determinations). Lead exposure as defined by dentine lead levels is more serious and widespread than previously acknowledged, and extends to groups other than those traditionally accepted as at risk."

347. Nelson, Arthur J.: "Functional Ambulation Profile," *Physical Therapy*, 54:1059-1065, October, 1974.

In this article is presented a clinical test of locomotor skill to be used in evaluating persons with neuromuscular or musculoskeletal disorders. It is called the Functional Ambulation Profile (FAP) and consists of assessing three phases of locomotion "progressing from static bilateral stance through independent ambulation." A recording form for the Profile is included. "Results from 110 profiles taken on mildly to moderately disabled adults revealed the Functional Ambulation Profile to be a clinically practical, valid, reliable, and objective measurement of locomotor skill." Suggestions are made for the clinical use of the Profile.

348. Nelson, George H.: "Relationship Between Amniotic Fluid Lecithin Concentration and Respiratory Distress Syndrome," *American Journal of Obstetrics and Gynecology*, 112:827-833, March 15, 1972.

Lecithin concentrations were determined in 139 samples of amniotic fluid, obtained at various stages of gestation. Ten samples, collected at delivery, were associated with infants who developed RDS, while 89 samples, collected at delivery, were associated with infants who did not develop RDS. Resultant data were felt to "suggest the following: (1) Amniotic fluid lecithin levels are higher near term than in earlier gestation; (2) amniotic fluid lecithin concentration appears to be lower in infants who develop RDS than in infants who do not; (3) a measurement of amniotic fluid lecithin concentration is more helpful than the L/S ratio because large changes in L/S ratio can occur with no change in lecithin because of a relatively large increment or decrement in sphingomyelin concentration; (4) filtered amniotic fluid should not be used for lecithin analysis; (5) measurement of amniotic fluid lecithin concentration shows promise as a fetal maturity test in the management of high-risk patients."

349. Nesbitt, Robert E.L., ed.: "Symposium on Perinatal Medicine Today," *Clinics in Perinatology*, 1:1-183, March, 1974.

This book comprises Volume 1, Number 1 of a new periodical, *Clinics in Perinatology*. The contributions of the above Symposium are contained in this issue. Included among the aspects of perinatology discussed by the contributors in the 16 articles are perinatal mortality, obstetrical aspects of perinatology, prenatal diagnoses in genetics, neurologic aspects, pharmacologic aspects, assessment of the feto-placental status using placental protein hormones and biochemical-enzymatic indices, amnioscopy, amniocentesis, estimation of fetal lung maturity, fetal blood sampling, fetal monitoring, and indices of fetal risk. Lists of references follow most articles and there is a subject index to the issue. Individual articles of particular pertinence to this bibliography are annotated separately.

350. Nesbitt, Robert E.L., Jr.: "Prenatal Identification of the Fetus at Risk," *Clinics in Perinatology*, 1:213-228, September, 1974.

Among the aspects considered are factors to be assessed at the initial encounter with the obstetric patient, the personal assessment of the patient, the importance of the past obstetric history, the "simple biophysical determinants of pregnancy outcome," and the screening of patients using clinical laboratory methods. Twenty "of the more significant disorders of pregnancy which may come to light in the course of careful antenatal screening which have a bearing on perinatal outcome" are listed.

351. "New Equipment and New Products," *American Journal of Physical Medicine*, 53:251-258, October, 1974.

Many new products and new equipment are reviewed in this section of this journal with each issue. Of particular interest are "swimsuits for the disabled" on page 255. These swimsuits are manufactured by Speedo and are designed with a built-in inflatable air cushion.

352. Niswander, Kenneth R., and Gordon, Myron. *The Collaborative Perinatal Study of the National Institute of Neurological Diseases and Stroke: The Women and Their Pregnancies*. Philadelphia: W.B. Saunders, 1972. 540 pp.

Part I of this volume contains a description of the Collaborative Perinatal Study including the population studied, the forms and data processing methods used, and the means of data analysis and interpretation of data. Part II is entitled, "Characteristics of the Mother and Her Pregnancy and Their Association with Fetal Outcome." The vast majority of the book consists of charts and tables of findings. There are five appendices, a glossary, and an index.

353. Niswander, Kenneth, and Jackson, Esther C.: "Physical Characteristics of the Gravida and Their Association with Birth Weight and Perinatal Death," *American Journal of Obstetrics and Gynecology*, 119:306-313, June 1, 1974.

Previous studies in this area are reviewed. Data are presented from an investigation in which data from the Collaborative Perinatal Study were utilized. Some 5,755 white and 6,012 black obstetric patients were studied "to determine the relative importance" of maternal height, maternal prepregnancy weight, and weight gained during pregnancy on birth weight and perinatal death. "Prepregnant weight and maternal weight gain are shown to be of substantial importance but the effect of maternal height on birth weight is small." Further discussion is conducted by Drs. Bruce B. Rolf, R. Elgin Orcutt, Thomas Kirschbaum, and Niswander.

354. Niven, P.A.R.; Ward, R.H.T.; and Chard, T.: "Human Placental Lactogen Levels in Amniotic Fluid in Rhesus Isoimmunization," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:988-990, December, 1974.

Human placental lactogen (HPL) levels were determined as described in 194 samples of amniotic fluid from 56 patients with rhesus isoimmunization. After delivery the patients were divided into three groups according to the severity of the disease: severe, moderate, or mild. "The more severe the disease the higher were the levels attained and the earlier in pregnancy did the rise occur. Levels above 1 μg./ml. at any stage of pregnancy suggested an unfavourable outcome for the fetus, while levels less than 0.7 μg./ml. after the 28th week of pregnancy indicated a favourable outcome. There was no relationship between the concentration of HPL in amniotic fluid, and the volume of amniotic fluid and there was thus no need to correct HPL levels for amniotic fluid volume. It is concluded that HPL estimations in amniotic fluid are a useful adjunct to other tests in the management of rhesus isoimmunization."

355. Nowak, Arthur J.: "Preventing Dental Disease in the Handicapped Child: A Challenge to the Professions," in *A Symposium; Dental Management of the Handicapped Child*, Clemens Full, editor. Iowa City, Iowa: University of Iowa, 1974. Pp. 55-65.

Eight developments that will affect the incidence of handicapping conditions in children are listed. The many needs of the handicapped child, other than those presented by the handicapping condition itself, and the meeting of these needs through comprehensive care clinics are discussed. One of these needs that has

received little attention is preventive dentistry for the handicapped child. The author proposes the development of "dental health programs, preventively oriented, to begin prenatally with parental counseling, followed by early examination, and then institute those preventive procedures that have been shown to effectively maintain the health of the oral structures." Such a program is explained in the stages of perinatal care, neonatal care, and postnatal care. The personnel needed and the time requirements are considered. Then reported are preventive dental aspects of a pilot program of the United Cerebral Palsy Association of the Pittsburgh District. In a chart the "Development of a Preventive Dentistry Program for the Young Cerebral Palsy Child" is outlined. The preliminary observations and the probable long term results of this program are described. In the summary four suggestions for the dental profession relative to the handicapped child are presented.

356. Nowak, Arthur, and Coffee, Larry: "Preventive Dentistry," *Exceptional Parent*, 4:17-21, May-June, 1974.

Dental disease is defined. A home dental care program for the disabled child is then presented including the use of "disclosants" to see plaque on the teeth, brushing the teeth, use of dental floss, and suggestions on how to make the child comfortable and allow the parent to see into the child's mouth during preventive dental care. The importance of a balanced diet and good eating habits and the use of floride to combat dental disease are also considered.

357. Oberman, J. William: "The Contribution of Deteriorated Housing to the Problem of Lead Intoxication in Childhood," *Clinical Proceedings, Children's Hospital National Medical Center*, 30:169-174, July-August, 1974.

Incidence statistics are reported. Factors discussed include blood lead levels as indicators of exposure to lead, pica, deteriorated housing as a source of lead, and some possible means of control.

358. Organ, L.W.; Bernstein, A.; Smith, K.D.; and Rowe, I.H.: "The Pre-Ejection Period of the Fetal Heart: Patterns of Change During Labor," *Journal of Obstetrics and Gynecology*, 120:49-55, September 1, 1974.

With methods described the pre-ejection period (PEP) of the cardiac cycle, the fetal electrocardiogram (ECG), and uterine contractions were monitored on 43 unselected patients who were in active labor in order "to assess the practicality of our current Doppler ultrasound technique for detecting PEP and to relate any change in PEP to fetal status and fetal heart rate patterns." While it was found to be possible to obtain PEP patterns during labor, there were few excellent PEP records. Thus, PEP monitoring was not felt to be technologically practical at this time. "However, its potential value was demonstrated with the observation that PEP changed clinically in a manner predicted in experiments with stressed fetal lambs - umbilical cord compression prolonged PEP and hypoxemia shortened it. These changes are essentially independent of heart rate and therefore PEP can be considered as an independent parameter for fetal assessment."

359. Orton, Sandra J.: "Simplified Wheelchair Measurement Form," *Physical Therapy*, 54:149-152, February, 1974.

"A simple-to-use and concise wheelchair measurement form is presented with explanations for its use."

360. O'Sullivan, John B.; Mahan, Clare M.; Charles, David; and Dandrow, Robert V.: "Medical Treatment of the Gestational Diabetic," *Obstetrics and Gynecology*, 43: 817-821, June, 1974.

A group of 'gestational diabetics' were alternately assigned to either a treatment group or a control group with the treated group receiving insulin and dietary therapy as described while the control group received routine obstetric care unless overt diabetes developed. The two groups did not differ significantly regarding the outcome of pregnancy. "The decreased loss rate among the insulin- and diet-treated gestational diabetics, however, did become significant when the data were reanalyzed with consideration of two important influencing variables. The high-risk group of gestational diabetics aged 25 years and older who received insulin therapy before the 32nd week of gestation had fewer fetal losses. Documentation of the critical role played by both maternal age and the gestational age at which insulin therapy is commenced now makes the institution of a conclusive prospective study feasible."

361. Palmer, R. Heather; Ouellette, Eileen M.; Warner, Lyle; and Leichtman, Sandra R.: "Congenital Malformations in Offspring of a Chronic Alcoholic Mother," *Pediatrics*, 53:490-494, April, 1974.

Reviewed in this article are the cases of three offspring of a chronic alcoholic mother. These children showed "a pattern of prenatal onset of growth deficiency and developmental delay, with microcephaly, small palpebral fissures, and multiple minor anomalies." These findings are discussed and related to the similar findings of Jones, et. al., as described.

362. Papiernik, Emile, and Kaminski, Monique: "Multifactorial Study of the Risk of Prematurity at 32 Weeks of Gestation. I. A Study of the Frequency of 30 Predictive Characteristics," *Journal of Perinatal Medicine*, 2:30-36, 1974. (Series: For II see #236.)

A list of 30 characteristics which are known to increase the occurrence of premature delivery was developed and is presented. These characteristics are grouped into the categories of general and social factors, unfavorable obstetrical and gynecological antecedents, danger signals at examination, and factors of fatigue. Then retrospectively compared from medical records at the 32nd week of pregnancy were a group of 153 patients who had delivered infants weighing less than 2,500 g. and a control group of 222 patients who had delivered infants weighing more than 2,500 g. All infants were delivered in 1969 in the same obstetric department. These two groups were further subdivided into five groups as described, and the frequency of abnormal characteristics from the list that were observed in these patients at 32 weeks of gestation was determined. "We have shown each group of newborns has a special frequency curve...with the higher frequencies and more numerous signs of abnormality in the group of the highest rate of prematurity. We show that this curve is very different for mothers of dysmatures (small for dates) even if some of the clinical manifestations remain the same."

363. Parr, Carol; Routh, Donald K.; Byrd, Marcia; McMillan, Julia: "A Developmental Study of the Asymmetrical Tonic Neck Reflex," *Developmental Medicine and Child Neurology*, 16:329-335, June, 1974.

The asymmetrical tonic neck reflex (ATNR) was elicited with methods described in detail in 84 normal children, ages 3 to 9 years, in an attempt to determine if the reflex could be quantitatively demonstrated in these children, to study the development of the reflex with age, and to determine the ability of the children to inhibit the reflex. "The ATNR was demonstrated in all the children and showed no systematic change with increasing age. When instructed to do so, the children in all age-groups were able to lessen the amount of reflex movement, but not to eliminate it completely. Some tentative norms for the physical examination of the ATNR in children are provided." Such standards may be useful in the future in assessing children for subtle central nervous system abnormalities.

364. Passo, Sherrilyn DeJean: "Positioning Infants with Myelomeningocele," *American Journal of Nursing*, 74:1658-1660, September, 1974.

The condition of myelomeningocele is described, and the positioning and general nursing care of infants with myelomeningocele that is administered at the Indiana University Medical Center is explained. An illustration of infant positioning is included as is a photograph of the use of a Frejka pillow splint to maintain hip abduction in such infants. Modifications in positioning to be used with infants also having hydrocephalus are considered, and suggestions for helping the parents are made.

365. Pathak, S.; Himaya, A.; and Mosher, R.: "The Small-for-Dates Syndrome: Some Biochemical Considerations in Prenatal Diagnoses," *American Journal of Obstetrics and Gynecology*, 120:32-39, September 1, 1974.

The cases of 240 normal pregnancies and 23 pregnancies resulting in small-for-dates infants were reviewed. Serial 24-hour urinary estriol levels and five maternal serum enzymes were studied in these cases in an attempt to diagnose the small-for-dates syndrome prenatally. "A prediction equation with the use of three variables, for instance, heat-stable alkaline phosphatase (HSAP), cystine aminopeptidase (CAP), and N-acetyl-β-glucosaminidase (NAG), shows that the small-for-dates syndrome can be identified at an early stage in the gestational period. The results of discriminant analysis on the biochemical data show that CAP offers the most predictive power. The importance of simultaneous estimation of several serum enzymes in the prenatal diagnoses of obstetric complications is emphasized."

366. Patrick, J.E.; Perry, T.B.; and Kinch, R.A.H.: "Fetoscopy and Fetal Blood Sampling: A Percutaneous Approach," *American Journal of Obstetrics and Gynecology*, 119:539-542, June 15, 1974.

A method of fetoscopy is explained which does not require either general anesthesia or major surgical incision; rather, it is performed percutaneously under local anesthesia. The equipment used and the method employed are described. Results are presented when the technique was performed on seven patients about to undergo pregnancy termination by saline instillation. Advantages and disadvantages of this technique and hopes for the future in the field of fetoscopy are discussed.

367. Paul, Richard H., and Hon, Edward H.: "Clinical Fetal Monitoring. V. Effect on Perinatal Outcome," *American Journal of Obstetrics and Gynecology*, 118:529-533, February 15, 1974.

A study was conducted to investigate the relationship, if any, between clinical fetal monitoring and improved perinatal outcome. Compared regarding perinatal mortality rate were a large group of obstetric cases (6,963 cases) who received intrapartum monitoring and a large group of obstetric cases who were unmonitored. The monitored group consisted largely of high-risk cases while the great majority of the unmonitored cases did not have high-risk indications. Findings are presented separately for the intrapartum deaths and the neonatal deaths that occurred in the two groups. Comparative results indicated "that the perinatal

outcome was better in the monitored than in the unmonitored group." "In addition to the probable advantages to the monitored fetus for the prevention of death, other important parameters must be considered. The long-term benefit of monitoring may include prevention or a decreased incidence of brain injury since fetal damage short of death may also be avoided." "To evaluate fetal monitoring fully, a well-designed obstetric study combined with comprehensive growth and development studies is necessary."

368. Paull, Margaret: "Children in the Day Centres," *Special Education: Future Trends*, 1:21-23, March, 1974.

Reported are the findings of a survey, conducted by the author, of 27 Spastic Society day centers for cerebral palsied children in England and Wales. Changes arising from the Education (Handicapped Children) Act of 1970 are considered along with the organizational structure of the centers, their staffing, educational aspects, and the outlook and needs for the future.

369. Pearn, J.H.: "The Use of Motor Milestones to Determine Retrospectively the Clinical Onset of Disease," *Australian Paediatric Journal*, 10:147-153, June, 1974.

Specific uses for a child's developmental data (milestones) are discussed. One of these uses is to retrospectively determine the time of the clinical onset of specific disease. A method whereby this can be accomplished is summarized. "By the use of such motor milestones, together with appropriate frequency distribution curves and a knowledge of the natural history of the disease in question, objective data can be collected which is not obtainable by other means. Its use is of particular relevance to the clinical management of infants and children who are known to be at risk from genetically determined neuromuscular disease of all types; and to nosological research in paediatrics. The method is of special value clinically in the management of those diseases whose prognosis is correlated with the child's age when clinical onset of the disease first becomes manifest."

370. Pearson, James F., and Davies, Paul: "The Effect of Continuous Lumbar Epidural Analgesia Upon Fetal Acid-Base Status During the First Stage of Labour," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:971-974, December, 1974.

The acid-base status was determined as described in 39 patients and their infants before clinically detectable labor began (Sample A), at the beginning of active labor (B), and when the cervix was fully dilated (C). The patients conformed to rigid listed criteria of normality. Seventeen of the 39 patients received continuous lumbar epidural analgesia while the other 22 patients were controls and were "managed conventionally" as described. "Epidural analgesia was associated with less alteration in fetal and maternal acid-base status during the first stage of labour and there was also closer feto-maternal acid-base correlation in patients receiving epidural block. The possible causes of these findings are briefly discussed."

371. Pearson, James F., and Davies, Paul: "The Effect of Continuous Lumbar Epidural Analgesia Upon Fetal Acid-Base Status During the Second Stage of Labour," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:975-979, December, 1974.

The acid-base status was determined as described in 28 mothers and their infants at full dilatation of the cervix and at delivery. Thirteen of the patients were controls who received "conventional analgesia during labour" and who delivered spontaneously. The other 15 patients received continuous lumbar epidural analgesia during labor and were divided into two groups, the 'non-pushing' group of seven patients of whom all but one received oxytocin infusion and "in whom the urge to bear down had been completely abolished by the epidural block," and the 'pushing' group of eight patients of whom six received oxytocin and who "retained the urge to bear down during the second stage of labour and were encouraged to do so." Clinical, laboratory, and statistical methods are described. "It was found that during the conventionally managed second stage of labour the mother and fetus became progressively acidotic. Although the administration of an epidural block with suppression of the bearing-down reflex prevented the progressive maternal metabolic acidosis, a cumulative fetal metabolic acidosis was still observed. The possible causes of these findings are briefly discussed."

372. Pedersen, Ejner: "Clinical Assessment and Pharmacologic Therapy of Spasticity," *Archives of Physical Medicine and Rehabilitation*, 55:344-354, August, 1974.

This paper was presented at a symposium on "Spasticity...Its Etiology, Physiology and the Pharmacology of a New Agent" which was held in Baltimore on September 25, 1972. The importance of being able to objectively measure or quantify spasticity is discussed. Then considered are a definition of spasticity, the criteria for measurement techniques, the clinical methods used for evaluation and measurement, neurophysiology-laboratory methods used, and pharmacotherapy. A summary is presented. "The assessment of spasticity in relation to pharmacotherapy requires both clinical observations and laboratory tests, including quantitative measurements of tendon jerks as well as electromyographic recording of reflex responses. The T and H reflexes can yield information about spindle and fusimotor function; the tonic vibration reflex helps to evaluate spasticity in relation to the T and H patterns. The flexor reflex and flexor spasms also are suitable for clinical tests and measurements. But batteries of quantitative tests crowded into a short time are likely to distort the tests and yield unreliable information. Methods carefully selected and applied yield information relevant to selecting suitable drugs, interpreting drug actions, and defining spasticity. There is no substitute for long-term clinical studies of dose-effect relationships, maintenance of beneficial changes, and frequency and nature of side effects."

373. Pettay, O.; Leinikki, P.; Donner, M.; and Lapinleimu, K.: "Herpes Simplex Virus Infection in the Newborn," *Archives of Disease in Childhood*, 47:97-103, February, 1972.

Fourteen cases of neonatal herpes simplex infection are described regarding pregnancy data, clinical and virological findings, EEG findings, and management. The case reports of two infants who were treated with intravenous iododeoxyuridine (IDU) are described in detail. The first of these two infants died, but

the second was treated early and completely recovered. The importance of early diagnosis is stressed. "Of our 9 cases with disseminated disease, 6 died, 1 is severely damaged, 1 is hemiplegic, and the only one who seems to have recovered is the child who received IDU treatment early."

374. Pettit, P.F.: "Physical Education and Sports for the Multiply-Handicapped Child," *Physiotherapy*, 60:47-49, February, 1974.

The author is the Superintendent Physiotherapist at the Meldreth Manor School of The Spastics Society. The physical activities available to children at this school, their many benefits to the children, and some of the individual children who have participated are described. The role of physical activities in the total program is considered.

375. Pfeiffer, R.A.; Palm, D.; Jünemann, G.; Mandl-Kramer, S.; and Heimann, E.: "Nosology of Congenital Non-Progressive Cerebellar Ataxia," *Neuropädiatrie*, 5:91-102, February, 1974.

Six cases in three families are reported. The literature on familial cerebellar ataxia is reviewed, and "a preliminary list of different genetic entities" in such cases is presented.

376. Pomerance, Jeffrey J.; Gluck, Louis; and Lynch, Vincent A.: "Maternal Exercise as a Screening Test for Uteroplacental Insufficiency," *Obstetrics and Gynecology*, 44:383-387, September, 1974.

A group of 54 low-risk pregnant women were given an exercise test at from 35 to 37 weeks of pregnancy. The fetal heart rate was measured in these cases both before and after the exercise test, and a physical fitness score was determined. 'Positive' test results were found in five cases which are described further. Of these five fetuses, four subsequently displayed signs of fetal distress during labor and delivery as defined. Seven other infants of the 54 cases also developed fetal distress, but six of these seven had umbilical cord problems. "Physical fitness was unrelated to uteroplacental insufficiency in the subjects tested." "The exercise test as described here is a simple, fast method for screening low-risk pregnant women, at least as early as five weeks prior to term, for evidence of uteroplacental insufficiency. If results are positive, these women should subsequently be monitored carefully during labor and delivery. In addition, it would seem prudent to advise these women to avoid strenuous activity in the interim."

377. Pomerance, Jeffrey J.; Gluck, Louis; and Lynch, Vincent A.: "Physical Fitness in Pregnancy: Its Effect on Pregnancy Outcome," *American Journal of Obstetrics and Gynecology*, 119:867-876, August 1, 1974.

Described is a study in which 54 "low-risk" women who were 35 to 37 weeks pregnant were tested on a bicycle ergometer and given a "physical fitness" score (PFS) as explained in order to determine if maternal "physical fitness" bestows "an advantage on her fetus in terms of (1) length of gestation, (2) length of labor, (3) birth weight, length and head circumference, and (4) one-minute Apgar

score." The study was completed by 41 of the 54 women with much data presented. "None of the following had a significant correlation with the maternal PFS: Length of gestation, complications of pregnancy, length of labor in primiparas, one-minute Apgar score, infant birth weight, infant length, and infant head circumference. The PFS varied inversely with the length of labor in multiparas ($p < 0.05$). Women who smoked 10 or fewer cigarettes per day had smaller babies than women who were nonsmokers ($p = 0.05$). Both prepregnancy weight and weight gain during pregnancy had a positive correlation with infant birth weight."

378. Powell, Louisa Feldman: "The Effect of Extra Stimulation and Maternal Involvement on the Development of Low-Birth-Weight Infants and on Maternal Behavior," *Child Development*, 45:106-113, March, 1974.

Previous studies in this area are reviewed. In the described study three groups of black, low-birth-weight infants were followed: (1) 13 infants who were given extra stimulation by the hospital staff during their hospital stay (handled experimental group), (2) 11 infants whose mothers were allowed to handle them during their hospital stay (maternal experimental group), and (3) 12 infants who received the usual treatment in the premature nursery (controls). The following hypotheses were investigated: "(1) Increased handling in the hospital leads to low-birth-weight infants' regaining their birth weight faster and having increased developmental quotients (DQs). (2) Maternal handling of the hospitalized infant leads to increased positive affect of the mother toward her child and 'better' maternal behavior." The treatment of each group is described as are the methods of assessment used during the newborn period and at 2, 4, and 6 months corrected age. "It was concluded that giving low-birth-weight infants extra stimulation improved their development through 6 months corrected age; however, giving mothers an opportunity to handle their babies did not influence their maternal behavior after the babies were home; finally responsivity, as measured by a newborn test and by the Bayley Scales, had some stability from birth through 6 months corrected age."

379. Powers, James S., and Roach, Christopher J.: "Clinical Usefulness of the Estrogen/Creatinine Ratio Obtained from a Single Voided Urine Sample in Pregnancy," *American Journal of Obstetrics and Gynecology*, 120:901-904, December 1, 1974.

In an effort to determine the clinical usefulness of the estrogen/creatinine ratio in assessing fetoplacental well-being, the ratio was determined in 363 first morning urine specimens collected at from 27 to 41 weeks' gestation from 208 pregnant women of whom 22 developed toxemia. Thirty-five of the patients were studied serially. On the basis of the findings it was concluded "that the E/C ratio is not helpful in assessing the integrity of the fetoplacental unit. However, more work is currently underway in abnormal pregnancies to ascertain whether or not the test is of value as a screening procedure to determine which patients need daily expensive estriol determinations."

380. Pownall, P.G., and Sailes, K.L.: "The Silk Spina Buggy," *Physiotherapy*, 60:277, September, 1974.

This Buggy is described and pictured. It was designed to teach children with spina bifida to walk using elbow crutches. "The principle of the Spina Buggy is that the children are trained to use their arms to carry them about and use

their legs as a crutch. It encourages good standing postures and better walking patterns are established early, so that transition to crutches takes place naturally."

381. Prescott, Thomas E., and Tesauro, Patricia A.: "A Method of Quantification and Description of Clinical Interactions with Aurally Handicapped Children," *Journal of Speech and Hearing Disorders*, 39:235-243, August, 1974.

Described is a system developed to enable the objective description and the quantification of events in therapy sessions in which the clinician, the parent, and the hearing-impaired child participate. The 17 categories used for describing the events of the session are listed, and the scoring method and ratio scoring are explained. "The system can be used to provide parents and clinicians information about their interactions with the child as well as to analyze the effects of the treatment sessions on the child's performance." Forms used in this system are presented in an appendix.

382. Randt, Clark T., and Derby, Bennett M.: "Behavioral and Brain Correlations in Early Life Nutritional Deprivation," *Archives of Neurology*, 28:157-172, March, 1973.

Brain and behavioral changes were studied in mice who were undernourished during gestation and until weaning at age 21 days. Findings were compared to those from normally-fed control mice. To assess behavioral changes, all of the mice were tested on activity level, on open field test, feeding behavior, motivation, active avoidance learning, spatial discrimination, learning reversals, and problem-solving. Methods are described. Both body and brain weights were found to be reduced in the nutritionally deprived mice even though they were fed on a normal diet after age 21 days. At birth the mean brain weight of these experimental animals was 20% lower than the controls, and at 600 days of age, there was still a 12% reduction. Behavior findings tended to support "an hypothesis of higher set-point for arousal resulting from early life nutritional deprivation which influences reversal learning and problem solving." Results are discussed.

383. Reimers, Jørgen: "Contracture of the Hamstrings in Spastic Cerebral Palsy," *Journal of Bone and Joint Surgery*, 56B:102-109, February, 1974.

This condition is described. In a prospective study, 112 operations for contracture of the hamstrings were performed on 60 cerebral palsied patients using three different techniques. If necessary, flexion contracture of the hip or equinus of the ankle were corrected first. All operations were performed between 1968 and 1972. During 1968 and 1969 the modified Egger's operation was performed on ten of the 60 patients, ages 3 to 13 years. This technique was then abandoned. Since 1970 distal elongation was performed on 23 of the patients, ages 4 to 16 years, and proximal elongation was performed on 27 of the patients, ages 4 to 48 years. "Since 1970 proximal elongation has been the standard method, with distal elongation only in the presence of arthrogenic flexion deformity of the knee exceeding 5 degrees." All patients were reviewed at least one year after the operation, and findings are presented. "After lengthening and weakening of the hamstrings, these spastic patients could stand more easily and walk with straighter knees, the length of stride became greater, stairs could be climbed more easily, the feet could be lifted more from the ground, and the wear on the front of the sole became less. In addition the sitting position often improved because flexion of the hips became normal."

384. Reimers, Jørgen: "Static and Dynamic Problems in Spastic Cerebral Palsy," *Journal of Bone and Joint Surgery*, 55B:822-827, November, 1973.

Problems considered include the isolated contracture of the hip flexors, the knee flexors, and the triceps surae; and the combined contracture of the hip and knee flexors, the knee flexors and triceps surae, and the flexors of the hip and knee as well as the triceps surae. Both treatment and faulty treatment are described for each of these problems. Three points are listed in the Summary: "(1) Analysis of the static and dynamic conditions in spastic cerebral palsy leads to the conclusion that contractures of the hip, knee and ankle should be released from above downwards, and that the full benefit is obtained only when all contractures have been corrected. (2) Only when these joints are mobilised by removal of the significant contractures is the spastic patient

able, despite other handicaps, to sit, stand and walk with the least hindrance and the least cosmetic fault. (3) In our Danish experience, inadequate or poor results from the orthopaedic surgery of cerebral palsy are mainly due to the fact that patients with contractures are operated on too little and too late, or not in the correct sequence."

385. Reynolds, David W.; Stagno, Sergio; Stubbs, K. Gayle; Dahle, Arthur J.; Livingston, Mary M.; Saxon, Samuel S.; and Alford, Charles A.: "Inapparent Congenital Cytomegalovirus Infection with Elevated Cord IgM Levels; Causal Relation with Auditory and Mental Deficiency," *New England Journal of Medicine*, 290:291-296, February 7, 1974.

In a longitudinal IgM screening study at the University Hospital in Birmingham, Alabama, over a period of 39 months, 22 infants were found to have inapparent congenital cytomegalovirus infection. Eighteen of these 22 infants were followed to an average age of 38 months. Microbiologic, immunologic, and clinical follow-up data are presented. "Some degree of sensorineural hearing loss occurred in nine of 16 patients tested as compared with two of 12 controls, and, in four, an auditory handicap was either proved or considered likely. A trend toward subnormal intelligence was observed in the infected children, and two manifested definite mental and social disability. Cytomegalovirus infection probably has an important causal role in mild to moderate auditory and mental dysfunction in childhood."

386. Reynolds, John W.: "The Use of Drugs in Influencing Human Fetal Metabolism," *Clinical Obstetrics and Gynecology*, 17:3:95-114, September, 1974.

Drugs and their usage in the following conditions are outlined: fetal lung maturation, hyperbilirubinemia, fetal infection from prolonged rupture of the membranes, prothrombin deficiency, Rh isoimmunization, influencing fetal adrenal function, and influencing fetal thyroid function. Six pages of references follow the article.

387. Rich, Eugene C.; Marshall, Richard E.; and Volpe, Joseph J.: "The Normal Neonatal Response to Pin-Prick," *Developmental Medicine and Child Neurology*, 16: 432-434, August, 1974.

This response was elicited as described in 130 healthy neonates in order that the clinical features of the normal neonatal response to pin-prick could be documented. Six of the 130 infants were pre-term. The types of movements elicited were categorized. The normal response was found to be movement of the lower and upper limbs (Type III) which was usually accompanied by grimace and/or cry. Of the six pre-term infants, five did not give a Type III response and none responded with either a grimace or a cry. The use of this study as a basis for future studies is discussed.

388. Richardson, C. Joan; Pomerance, Jeffrey J.; Cunningham, M. Douglas; and Gluck, Louis: "Acceleration of Fetal Lung Maturation Following Prolonged Rupture of the Membranes," *American Journal of Obstetrics and Gynecology*, 118:1115-1118, April 15, 1974.

Studied regarding "the effect of prolonged rupture of the fetal membrane on fetal lung maturation as manifested by the subsequent development of the respiratory distress syndrome (RDS)," were 64 premature infants whose mothers had uncomplicated pregnancies except for prolonged rupture of the membranes. The 64 infants were divided into two groups: Group 1 consisted of 42 infants whose fetal membranes ruptured 24 hours or less before delivery, and Group 2 contained 22 infants whose membranes ruptured more than 24 hours before delivery. In Group 1 27 infants (64%) developed RDS while in Group 2 only seven infants (31%) developed RDS. More data are presented regarding deaths from RDS in the two groups, morbidity other than RDS, over-all survival, maternal complications, and L/S ratios. Findings indicated that "prolonged rupture of the membranes exerts an accelerating effect on fetal lung maturation independent of gestational age or birth weight and resulting in absence of the respiratory distress syndrome (RDS)."

389. Richlin, Milton; Weinstein, Sidney; and Giannini, Margaret: "Development of Neurophysiological Indices of Mental Retardation: I. Interhemispheric Asymmetry of the Auditory Evoked Cortical Response," *Pediatrics*, 52:534-541, October, 1973.

Listed are the two problem areas of pediatric diagnosis in which neurophysiological measures, such as the evoked cortical response, have aided in the solution. These are "(1) differentiation between normal children developing at a slow rate and mentally retarded children with brain dysfunction, and (2) determination of the existence (and extent) of auditory or visual defects in infants, as well as in the mentally retarded." Previous research is reviewed. A study was conducted for the purpose of creating "an index for differential diagnosis of mental retardation, based upon the normal asymmetry in amplitude of the AECR in the left and right hemispheres." The procedure is briefly described in which auditory evoked cortical responses were investigated in seven 'normal' children (all dextrals) and in eight mentally retarded children (4 dextrals and 4 sinistrals). "Hemispheric asymmetry of the maximum amplitude of the AECR was found in the following pattern: left greater than right in normal dextrals, right greater than left in retarded dextrals, and no difference in the retarded sinistrals." Regarding the 15 study children, use of this preliminary diagnostic method would have resulted in one false-positive diagnosis and two false-negative diagnoses. Results and their implications are discussed, and five problem areas in the diagnostic use of AECR in pediatrics are listed.

390. Ring, Nigel: "Aids for Handicapped Children," in *Aids for the Severely Handicapped* edited by Keith Copeland. London: Sector Publishing Limited, 1974. Pp. 136-140.

Briefly described and pictured are aids devised at Chailey Heritage in Sussex for the children cared for there. They include the Chailey Go-Cart, a standing-chair, dressing and personal hygiene aids, eating aids, scissors, and pencil holders.

391. Roberts, J.A.; Hill, C.W.; and Riopelle, A.J.: "Maternal Protein Deprivation and Toxemia of Pregnancy: Studies in the Rhesus Monkey (Macaca Mulatta)," *American Journal of Obstetrics and Gynecology*, 118:14-17, January 1, 1974.

A study was conducted on mature female rhesus monkeys to evaluate the effects of protein deprivation during pregnancy on offspring and on the incidence of toxemia of pregnancy. A total of 43 pregnancies which were fed one of three diets during pregnancy were followed. "Severe protein deficiency was found to increase stillbirth rate; toxemia of pregnancy was seen in no monkey during this study." The impression that protein deficiency during pregnancy is "responsible for the increased incidence of toxemia of pregnancy in lower socioeconomic groups since it would be expected that their protein intake during pregnancy would be lower than the general population" was not supported by this study.

392. Robinault, Isabel P., and Denhoff, Eric: "The Multiple Dysfunctions Called Cerebral Palsy," in *Medical and Psychological Aspects of Disability* by A. Beatrix Cobb. Springfield, Illinois: C.C. Thomas, 1973. Pp. 118-143.

Cerebral palsy is defined and its causes and physical characteristics are described with the aid of illustrative case histories. Then considered are the identification and medical treatment of cerebral palsy patients, psychological aspects and rehabilitation.

393. Robinson, M.J.: "Problems in the Management of Neonatal Meningitis," *Australian Paediatric Journal*, 10:267-269, October, 1974.

A case history is reported in order to illustrate some of the problems encountered in neonatal meningitis. They include early diagnosis, adequate chemotherapy and the occurrence of cerebral edema. Management is considered.

394. Roht, Lewis H., and Aoyama, Hideyasu: "Induced Abortion and Its Sequelae: Prematurity and Spontaneous Abortion," *American Journal of Obstetrics and Gynecology*, 120:868-874, December 1, 1974.

The rates of prematurity and spontaneous abortion were used as indices in a survey of 3,877 Japanese women to investigate whether induced abortion was associated with these undesirable effects in subsequent pregnancies. "Results suggest that the rates of prematurity and/or spontaneous abortion were not increased in pregnancies subsequent to an induced abortion." It is felt that more research is necessary in this area, and questions that need study are listed.

395. Rosen, Mortimer G.; Scibetta, Joseph J.; and Hochberg, Charles J.: Fetal Electroencephalography. IV. The FEEG During Spontaneous and Forceps Birth," *Obstetrics and Gynecology*, 42:283-289, August, 1973.

With methods described, the FEEG was studied during three events associated with birth: "1) Maternal 'bearing down' during the second stage of labor; 2) spontaneous birth; and 3) forceps birth." Findings are presented separately regarding each event. "When the vertex is delivered spontaneously, independent of

fetal heart rate decelerations with head compression or maternal 'pushing,' the FEEG remains visually unchanged. During forceps application, and during traction, the FEEG rapidly changes from low voltage irregular activity to a flat line. After removal of the forceps the FEEG once again appears similar to that seen in other neonates delivered without forceps." Developmental studies are being conducted on the infants in this study.

396. Rosenstein, Solomon N.: "'Premature' Infants: The Relation of Dental Abnormalities to Neurological and Psychometric Status at Age Two Years," *Developmental Medicine and Child Neurology*, 16:158-162, April, 1974.

Examined in a double-blind study were 66 children, age two years, who were preterm at birth with birth weights of less than 2000 g., and who had received either penicillin-sulfisoxazole or oxytetracycline during the first five days of life. Dental findings are reported and compared with neurological, psychometric and speech examination findings with the findings being designated as either "normal" or "abnormal." "The dental abnormality was enamel aplasia of primary teeth, the neurological abnormality was definite or suspected evidence of neurological deficit, and the psychometric abnormality was borderline or poorer performance on psychometric testing. The results of these examinations showed that dental abnormality at two years was significantly correlated with neurological and psychometric abnormalities."

397. Ross Conference on Pediatric Research, 66th, Litchfield, Arizona, November 19-20, 1973. *Regionalization of Perinatal Care.* Columbus, Ohio: Ross Laboratories, 1974. 92 pp.

This book contains the report of the above Conference. Topics discussed in the 18 contributions contained in the volume include the various aspects of concern in the regionalization of perinatal care, the roles of specific professional people and organizations in developing regional perinatal care, and the development of infant transport systems. Discussions by participants at the Conference are included as is a bibliography.

398. Rosso, P., and Winick, M.: "Intrauterine Growth Retardation. A New Systematic Approach Based on the Clinical and Biochemical Characteristics of This Condition," *Journal of Perinatal Medicine*, 2:147-160, 1974.

An etiological classification of intrauterine growth retardation (IUGR) is discussed and diagramed. There are both 'intrinsic' and 'extrinsic' factors involved in the etiology. There are also conditions that are as yet unclassifiable. The clinical types of IUGR are considered. There are two groups of growth retarded newborns: those with multiple congenital anomalies and those with no congenital anomalies. The latter of these two groups can be further subdivided into Type I and Type II "depending on the relative growth of the head and body length to the rest of the organs of the body." Evidence supporting the existence of these two types is presented as is evidence concerned with the mechanisms involved in these two types of IUGR.

399. Rothbard, Malcolm J., and DeJesus, Tan Peck Siu K.: "The Foam Test as a Prognosticator of Fetal Pulmonary Maturity," *American Journal of Obstetrics and Gynecology*, 119:924-928, August 1, 1974.

The foam test was performed on 93 samples of amniotic fluid from 82 consecutive high-risk pregnancies. The pregnancy was terminated within 48 hours when the foam test results were positive "with no case of respiratory distress syndrome ensuing." Six brief case reports are described, findings are discussed, and the following conclusions are presented: "(1) The foam test is a simple and reliable means of determining in utero pulmonary maturity. (2) There were no false positive results. (3) Patients with intermediate values may develop transient respiratory distress but do not progress to hyaline membrane disease. (4) A negative foam test is not absolute (i.e., may be false negative) and the pregnancy should still be terminated if the over-all obstetric situation dictates. (5) Two cases of polyhydramnios were associated with false negative results."

400. Rothstein, Peter, and Gould, Jeffrey B.: "Born with a Habit; Infants of Drug-Addicted Mothers," *Pediatric Clinics of North America*, 21:307-321, May, 1974.

Aspects considered include the pregnant addict, the effects of heroin and methadone on the fetus, neonatal withdrawal symptoms, and the treatment of the infant. A review is made of efforts to follow-up such infants, and efforts made at the Boston City Hospital to follow-up their cases are described.

401. Roversi, Gian Domenico; Canussio, Vittorio; Gargiulo, Mario; and Candiani, Giovanni Battista: "The Intensive Care of Perinatal Risk in Pregnant Diabetics (136 Cases): A New Therapeutic Scheme for the Best Control of Maternal Disease," *Journal of Perinatal Medicine*, 1:114-124, 1973.

Described is a program of intensive care used with 136 pregnant diabetic patients. The program of therapy consists of continually establishing during the pregnancy for each patient the maximum dose of insulin she can tolerate. An individualized diet is also strictly followed. Results for these 136 cases are presented with regard to the time and type of delivery, birth weight, perinatal mortality, malformations, therapeutic abortion, and the relation between toxemia and fetal malformations. Findings are discussed. There was a 2.9% perinatal mortality rate and also a 2.9% rate of malformations, none of which was incompatible with life. Birth weight exceeded 4,000 g in only 7.2% of the newborns. Toxemia occurred in 5.8% of the patients. "The results show that the fetal risk in pregnant diabetic patients can be deeply reduced maintaining a constant insulin balance. The adopted scheme seems to fulfill these requirements and it can be realized without specialized centers."

402. Rush, David: "Examination of the Relationship Between Birthweight, Cigarette Smoking During Pregnancy and Maternal Weight Gain," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:746-752, October, 1974.

Human and animal studies in this area are reviewed. The hypothesis "that the low birthweight of infants whose mothers smoke in pregnancy is mediated by depressed caloric intake" was explored by studying 162 poor, black, American women and their live born infants. These patients and criteria they met for inclusion

into the study are explained. All patients were booked before 30 weeks of gestation, and smoking status was determined at booking. Those mothers who smoked were found to have a lower mean weekly weight gain. Also there was "a strong and highly significant gradient of decreasing weight gain with increased amount smoked." Although not statistically significant, a higher weight gain was noted in those mothers who stopped smoking prior to delivery. Much data and other findings are reported. "Regression analyses were performed in order to quantitate the unique and joint contributions of smoking and change in maternal weight to birthweight. A least half, and usually closer to three-quarters, of the effect of smoking on birthweight was jointly shared with maternal weight change. Smoking is in all likelihood depressing fetal growth, in large part, by depression of caloric intake, reflected by lower maternal weight gain. No other examined differences between smokers and non-smokers accounted for these differences."

403. Russell, Peter, and Altshuler, Geoffrey: "Placental Abnormalities of Congenital Syphilis," *American Journal of Diseases of Children*, 128:160-163, August, 1974.

The histological examination of the placenta has been found to be a prompt means of diagnosing congenital syphilis. Three cases of congenital syphilis are presented to demonstrate "a triad of placental changes: focal villitis, endovascular and perivascular proliferation in villous vessels, and relative immaturity of villi. Additionally, spirochetes were present."

404. Sǎbata, V.; Znamenáček, K.; Přibylová, H.; and Melichar, V.: "The Effect of Glucose in the Prenatal Treatment of Small-for-Date Fetuses," *Biology of the Neonate*, 22:78-86, 1973.

Glucose was administered during labor as described to 12 patients having small-for-date fetuses. Results regarding the mother, the umbilical cord, and the newborn are reported and were compared to those from 12 patients with small-for-date fetuses who received no such prenatal treatment. The glucose was found to be retained and utilized by the fetus. The prenatal glucose infusion was seen to prevent neonatal hypoglycemia and enhance the mobilization of free fatty acids. "The prenatal glucose infusion at a speed of 1 g glucose/min. appears to be a useful tool in the treatment of small-for-date fetuses." "The question, whether glucose infusions could improve the growth of small-for-date fetuses earlier in pregnancy, remains so far unanswered. At present there are no sufficiently reliable methods for prenatal assessment of the degree of intrauterine growth retardation to allow an accurate measurement of the effect of glucose infusion. This problem, however, important as it is, will be solved in the future."

405. Sabatino, David A.; Abbott, John C.; and Becker, John T.: "What Does the Frostig DTVP Measure," *Exceptional Children*, 40:453-454, March, 1974.

A study was conducted, as explained, using 129 kindergarten children in an attempt to answer the following three questions concerning the Frostig Developmental Test of Visual Perception (DTVP): "(1.) What is the test-retest reliability of the five subtests? (2.) Does the DTVP measure at least two distinct visual-motor perceptual behaviors? (3.) What are the changes in factorial relationships among DTVP subtests after using the Frostig Program for the Development of Visual Perception (FPDVP) for a 10 week period of intervention?" Findings are presented.

406. Sabbagha, Rudy E.; Turner, J. Howard; Rockette, Howard; Mazer, Julius; and Orgill, Julie: "Sonar BPD and Fetal Age: Definition of the Relationship," *Obstetrics and Gynecology*, 43:7-14, January, 1974.

To study the accuracy of the sonar biparietal diameter (BPD) in predicting fetal age, the BPD was measured using sonography in a large group of women at between 20 to 40 weeks of gestation. Gestational age was confirmed as described in these cases. Statistical methods used are explained in detail. It was found that "in the interval of 20-29 weeks, fetal maturity can be predicted from BPD by linear regression, with a maximal deviation from the mean of 11 days in 95% of the population." However after 25 weeks of gestation, this method is not feasible. "A different method is presented in which third trimester BPD values are used to assign precise probabilities to the estimates of fetal age. This approach transforms the sonar gestational age for this later period into a clinically meaningful parameter. Sonographic study of all high-risk pregnancies is recommended between 20-25 weeks. Such early evaluation establishes fetal age and permits easier differentiation of dysmaturity if growth retardation occurs in the latter part of pregnancy." Graphs and tables are presented and explained.

407. Sadovsky, E., and Yaffe, H.: "Daily Fetal Movement Recording and Fetal Progress," *Obstetrics and Gynecology*, 41:845-850, June, 1973.

This report aims at demonstrating the value of keeping a Daily Fetal Movements Record (DFMR) in high risk pregnancies where placental insufficiency is suspected. Cases of the authors have shown that a decrease or cessation of fetal movements with normal heartbeats still audible may be "an alarm indicating severe intrauterine fetal asphyxia, requiring immediate delivery of the fetus." Two cases are presented to show this alarm signal of a decrease or cessation of fetal movements with normal heartbeats heard at least one day before intrauterine fetal death. Three cases are described to demonstrate the alarm signal seen when living infants were delivered. "The fetuses were small or showed neonatal asphyxia." Two further cases are presented to illustrate cases in which placental insufficiency was diagnosed, but the DFMR was not alarming and thus the pregnancies were allowed to continue longer.

408. Saland, Joel; McNamara, Helen; and Cohen, Michael I.: "Navajo Jaundice: A Variant of Neonatal Hyperbilirubinemia Associated with Breast Feeding," *Journal of Pediatrics*, 85:271-275, August, 1974.

The frequent presence in Navajo newborns of a syndrome of unconjugated hyperbilirubinemia is noted. Studied were 47 Navajo consecutively-born neonates, of whom 39 were breast fed, and 36 non-Indian, healthy, term neonates from New York who were both bottle and breast fed (controls). Hematologic and inhibition studies were conducted as described. The subgroups were identified within the Navajo group of infants: "(1) breast-fed infants in whom inhibition of bilirubin glucuronyl transferase activity was related to a substance in colostrum and breast milk in the first days of life and (2) a smaller subgroup of bottle-fed infants who had significant jaundice when compared with a control population from New York. The serum bilirubin concentrations of the Navajo bottle-fed infants never achieved those of the breast-fed subgroup." Other pertinent studies are reviewed and findings are discussed. Data from the study "suggest that to some extent the neonatal unconjugated hyperbilirubinemia noted in the Navajo Indian is related to breast feeding, with earlier transmission of the presumed inhibitor substance than previously observed in a Caucasian population."

409. Saling, E.Z., and Dudenhausen, J.W.: "The Present Situation of Clinical Monitoring of the Fetus During Labor," *Journal of Perinatal Medicine*, 1:75-103, 1973.

The authors list four "most important aims of modern clinical monitoring of the fetus during labor." Then reviewed in detail are three modern methods of monitoring the fetus during labor. These are aminioscopy upon admission to the hospital, cardiotocography, and fetal blood analysis. Also considered in relation to each of these three methods are the selection of patients, the instruments used, and the disadvantages and dangers. There is a bibliography containing 96 citations.

410. Saling, Erich: "Combined Use of Amnioscopy and Amniocentesis in the Surveillance of Twin Pregnancy," *Journal of Perinatal Medicine*, 2:69-72, 1974.

The technical procedure by which both of these tests are used in combination in the twin pregnancy is explained, and its successful usage in four cases of twin pregnancy is reported.

411. Samaan, N.A.; Gallager, H.S.; McRoberts, W.A., Jr.; and Holt, B.: "Differential Evaluation of the Fetoplacental Unit in Patients with Diabetes," *American Journal of Obstetrics and Gynecology*, 120:825-832, November 15, 1974.

Measured throughout pregnancy and compared in 11 normal and 16 diabetic patients were plasma unconjugated estrone (E_1), estradiol (E_2), and estriol (E_3), and 24-hour urinary estriol levels. The placentas of these patients were also studied histologically. Of the 16 diabetic patients, eight had babies who survived, two died as neonates, and six died in utero. E_1, E_2, and E_3 levels were seen to rise continuously during pregnancy in the normal patients. In those diabetic patients who had surviving infants, the E_1 and E_2 levels were seen to rise similarily to the normal patients. In those diabetic patients who produced infants who died during the neonatal period, E_1 and E_2 levels were seen to be either subnormal or low normal during pregnancy. All of the diabetic patients whose fetuses died in utero and in whom plasma samples were obtained after the death of the fetus had subnormal E_1 and E_2 levels. "Our data indicate that the unconjugated E_1 and E_2 plasma levels may be of value in predicting the fetal outcome. The plasma unconjugated E_3 levels are low in all diabetic patients regardless of the condition of the fetus. Therefore, plasma free estriol measurement is of little direct value in assessing pregnancy outcome. However, urinary estriol measurements correlated well with fetal survival. Placental sections showed significant changes in all the diabetic patients regardless of the degree of severity or the status of therapeutic control of the disease." These findings are discussed.

412. Samilson, Robert L.: "Presidential Address to the American Academy for Cerebral Palsy," *Developmental Medicine and Child Neurology*, 16:242-246, April, 1974.

This address, delivered by Dr. Samilson to the Academy in Washington, D.C., in December, 1973, is presented. Dr. Samilson discussed words, their proper usage, and their application to relevant problems in order to arrive at rational solutions. Four conditions of adult learning are listed. The admittance of therapists to associate membership in the Academy is noted by Dr. Samilson, and a list of specific objectives of a group of therapists is presented. Dr. Samilson then lists suggested solutions to needs mentioned by the therapists. In closing he tells his audience to "be sceptical of what you have heard from me and from others. Ask pointed questions of speakers and instructors. Then we will learn and be instruments of constructive change."

413. Samilson, Robert L.; Tsou, Paul; Aamoth, Gordon; and Green, William M.: "Dislocation and Subluxation of the Hip in Cerebral Palsy," *Journal of Bone and Joint Surgery*, 54A:863-873, June, 1972.

Some 274 patients at Sonoma State Hospital who had cerebral palsy complicated by subluxation or dislocation of the hip were studied. Dislocation was found to have occurred at the mean age of seven years. "The patients were predominately

the neurologically immature patients in the hospital, that is those with retention of neonatal reflexes and delay in achieving developmental milestones." The characteristics of these patients are further described as are the indications for surgery, the non-operative management, the surgical management, and the post-operative complications.

414. Sand, Patricia L.; Taylor, Neal; Hill, Margaret; Kosky, Norman; and Rawlings, Mary: "Hand Function in Children with Myelomeningocele," *American Journal of Occupational Therapy*, 28:87-90, February, 1974.

The hand function of 25 children, ages 6 to 19 years, with myelomeningocele was evaluated with tests described, and findings were related to the "presence or absence of hydrocephalus, motor and sensory lesion levels, and intellectual level. All of the hydrocephalic children studied showed deviant hand function scores. However, the majority of the meningomyelocele children classified as hydrocephalus-absent also showed deviant hand function. Possible causes and clinical implications are discussed."

415. Sanner, Gunnar: "The Dysequilibrium Syndrome," *Neuropädiatrie*, 4:403-413, December, 1973.

Previous research on inherited syndromes of cerebral palsy is reviewed. In Sweden, the dysequilibrium syndrome (DES) was studied genetically in 23 patients from 19 sibships, all having typical DES. Seven of the patients had a probable postnatal cataract, and 20 were mentally retarded. Findings on these patients and their families are presented in the following areas: pregnancy, delivery, neonatal period, and infancy; incidence of DES, geographical distribution of cases; genealogy; consanguinity; convergent families; genetic analysis of family data; and sex ratio and birth rank among affected children. "The following results are definitely in favour of an autosomal recessive mode of transmission of the dysequilibrium syndrome: 1. Affected relatives were confined to sibships; 2. Both sexes were affected; 3. Parental consanguinity was found in 4 of the 19 families; 4. Results of analyses of family data by the Weinberg sibling method and the a priori method tally well with what may be expected from an autosomal recessive inheritance." "It is concluded that in patients with a typical dysequilibrium syndrome autosomal recessive inheritance must always be considered as the likely aetiology."

416. Sanner, Gunnar, and Hagberg, Bengt: "188 Cases of Non-Progressive Ataxic Syndromes in Childhood," *Neuropädiatrie*, 5:224-235, August, 1974.

This group of cases was classified on the basis of predominating signs into six subdivisions of ataxic non-progressive conditions. These six subgroups are listed and explained. They are simple ataxia, ataxic diplegia, dysequilibrium syndrome, dysequilibrium syndrome with diplegic spasticity, minimal ataxia, and mixed forms of cerebral palsy with ataxia. The history of each of these cases was studied to determine probable etiology, and findings were correlated with the six types of ataxic syndromes. "The findings confirmed that non-progressive ataxic syndromes, especially simple ataxia and the dysequilibrium syndrome, very frequently have a prenatal origin. In fact, an unknown or a prenatal aetiology

completely dominated in the series of patients with the dysequilibrium syndrome and it is thought that autosomal recessive inheritance is the main feature underlying this syndrome. Cases of ataxic diplegia were much more often combined with obvious perinatal complications - prematurity included - than was found in simple ataxia. In cases of 'minimal ataxia' the aetiology was very heterogeneous and the group was considered to be differently composed from the group of simple ataxia. It is concluded that these two groups are pathogenetically quite different."

417. Sayre, James W.; Charney, Evan; Vostal, Jaroslav; and Pless, I. Barry: "House and Hand Dust as a Potential Source of Childhood Lead Exposure," *American Journal of Disease of Children*, 127:167-170, February, 1974.

Studies in recent years in Rochester, N.Y., have resulted in a questioning of the assumption that high blood lead levels in inner-city young children are due to the ingestion of lead by the eating of chips of lead-based paint. The studies which have led to the questioning of this assumption are reviewed, and a subsequent study is described which was conducted "to explore the following hypothesis: lead is present in house dust in inner-city homes in sufficient quantity to explain the observed distribution of blood lead levels in children. The mechanism of poisoning involves contamination of children's hands by repeated contact with floor, walls, and windowsills in the environment, and subsequent ingestion by the typically frequent hand-to-mouth activities of preschool children." The methods used and the results of this study are reported. Two groups of children and their homes were tested for lead levels (the children's hands and household surfaces). Findings indicate that dust containing lead was found on both the hands and household surfaces of the inner-city children in significantly larger amounts than was found on the hands and household surfaces of suburban children. These findings are discussed, and the paint chip theory of high lead levels is further questioned.

418. Sbarra, Anthony J.; Selvaraj, Ratnam J.; Kennedy, Joseph L., Jr.; Mitchell, George W., Jr.; and Paul, Benoy B.: "A New Amniotic Fluid Lecithin Button Test," *Obstetrics and Gynecology*, 44:500-502, October, 1974.

"A simple, rapid, economical test" for the estimation of amniotic fluid lecithin is described. Results of using this procedure on 36 amniotic fluid samples from 30 patients are reported. "Data obtained to date indicate that the amniotic fluid lecithin increases with gestational age and that the test may successfully be used for detecting pulmonary maturity."

419. Scanlon, John W.: "Obstetric Anesthesia as a Neonatal Risk Factor in Normal Labor and Delivery," *Clinics in Perinatology*, 1:465-482, September, 1974.

Specific drugs and their effects on the neonate are discussed under the following headings: "drugs used for maternal comfort during labor: narcotics," "drugs used to alter maternal behavior during labor: sedatives and hypnotics," and "drugs used for conduction anesthesia."

420. Scherzer, Alfred L.: "Early Diagnosis, Management, and Treatment of Cerebral Palsy," *Rehabilitation Literature*, 35:194-199, July, 1974.

The condition of cerebral palsy is described. Within this discussion it is noted that "within recent years it has become widely recognized that the major manifestations of cerebral palsy are not present at the time the precipitating cause occurs. Rather, the motor patterns emerge as the result of maturation of an abnormal nervous system." Then considered is the early developmental evaluation of the child. The presence of postural reflex abnormalities, abnormalities of tone, and difficulties in management and early learning are each considered as aspects of early infant developmental dysfunction. A program for the infant with cerebral palsy is discussed. This program must include both management and treatment of the infant. Also briefly considered are a program for the older cerebral palsied child and evaluation of the program. "No single professional alone can provide all that is needed. Rather, it is the integration of various therapies and skills at a particular clinic that can make such a program meaningful."

421. Scherzer, Alfred L., and Mike, Valerie: "Cerebral Palsy and the Low-Birth-Weight Child," *American Journal of Diseases of Children*, 128:199-203, August, 1974.

The relationship shown in previous studies between low birth weight and cerebral palsy is discussed. A total of 202 cerebral palsied patients who had birth weights of five pounds or less were studied regarding pregnancy and delivery factors, intelligence, type of cerebral palsy, and extent of physical impairment. These patients were also classified into one of the following gestational categories: small for gestational age, appropriate for gestational age (true premature), and large for gestational age. Data was then analyzed in three stages. In Stage 1 the gestational groups were compared with each other. There was no significant relationship found between any of the variables studied and length of gestation. In Stage 2 the study group was compared with a group of 74 full-term, normal birth weight, cerebral palsied patients. Findings indicated there to be "more spastic diplegia/paraplegia, less physical impairment, and greater intellectual potential in the study population." In Stage 3 the study group was compared to two groups of live newborn infants having low birth weights. There was "a significantly smaller proportion of small-for-gestational age infants" in the study group. Findings are discussed, and speculation is offered.

422. Schlenoff, David: "Considerations in Administering Intelligence Tests to the Physically Disabled," *Rehabilitation Literature*, 35:362-363, December, 1974.

Problems in this area are briefly discussed.

423. Schmidt, H.; Albrecht, H.; Bokelmann, J.; and Morgenstern, J.: "Computed Dip-Parameters Derived from Digitized FHR-Curves. III. The Valuating Parameter," *Journal of Perinatal Medicine*, 2:268-275, 1974. (Series: For I See # 327; for II see #8.)

"The purpose of this work is to provide a new parameter which allows a better discrimination between normal and pathological states of the newborn. This means that the new parameter - beyond a purely visual description of a dip -

should be the measure of the severity of a dip." Thus an attempt was made "to derive a parameter which evaluates the dip which satisfies the following demands: 1. Several descriptive parameters are considered simultaneously. 2. The descriptive parameters are weighted differently as to their power of discrimination. 3. Preceeding dips and their time sequences are considered." Studied were the descriptive parameters of 473 dips from normal newborns and the descriptive parameters of 376 dips from pathological newborns. The methods and results of deriving such a valuating parameter that satisfies the above three demands are described. A hypothetical parameter was developed which showed "a marked difference between the groups with normal and pathological newborn courses respectively."

424. Schreyer, Peter; Tamir, Isreal; Bukovsky, Ian; Weinraub, Zvi; and Caspi, Eliahu: "Amniotic Fluid Total Phospholipids Versus Lecithin/Sphingomyelin Ratio in the Evaluation of Fetal Lung Maturity," *American Journal of Obstetrics and Gynecology*, 120:909-917, December 1, 1974.

Total phospholipids (TPL) and the lecithin/sphingomyelin (L/S) ratio were determined in 206 samples of amniotic fluid from 177 patients at various stages of gestation. Of these 177 women, 146 had normal pregnancies, 15 were diabetic, and 16 had pregnancies complicated by toxemia, hypertension, chronic glomerulonephritis, and placental insufficiency. Results indicated "that an excellent prediction of fetal respiratory outcome can be based on measurement of TPL concentration if the values are more than 2.8 mg. per 100 ml. or less than 1.5 mg. per 100 ml." However, "the intermediate zone between these values, where fetal respiratory outcome could not be predicted, contained significantly more cases when TPL was evaluated compared to evaluation by the L/S ratio. It would appear that TPL determination is valuable if values are more than 2.8 or less than 1.6 mg. per 100 ml. Between these values L/S ratio determination is advised."

425. Schulman, Carol A.: "Heart Rate Audiometry. Part I. An Evaluation of Heart Rate Response to Auditory Stimuli in Newborn Hearing Screening," *Neuropädiatrie*, 4: 362-374, December, 1973.

Heart rate response in the newborn to auditory stimuli was assessed for its usefulness as a means of screening neonatal hearing. The instrumentation used is explained as are the three experiments conducted and their results. In Experiment I the stimuli were pure tones, in Experiment II the stimuli were warbled tones, and in Experiment III band-limited noise was used. Subjects were normal, full term, 2-day-old neonates. Because the method of Experiment III produced a "100% response to the high frequency stimulus, and a satisfactory rate for the low frequency," this procedure was used in a described clinical screening program. Tested were a series of 91 consecutively-born, normal, full-term neonates, a series of 35 infants at risk of hearing loss, and four infants with absence of the temporal cortex. Results for each of these series is presented. It was concluded on the basis of these findings that "the high intensity required to elicit heart rate response to controlled auditory stimuli in the newborn infant suggests that this method is not useful for mass screening." Further discussion is conducted.

426. Schulman, Carol A.: "Heart Rate Audiometry. Part II. The Relationship Between Heart Rate Change Threshold and Audiometric Threshold in Hearing-Impaired Children," *Neuropädiatrie*, 5:19-27, February, 1974.

In this described study the threshold for heart rate change in response to controlled auditory stimuli was compared to thresholds obtained by behavior audiometry in order to determine "whether heart rate change is a sufficiently sensitive indicator of hearing threshold to be useful in the early diagnosis of hearing impairment." There were two groups of subjects, ranging in age from six weeks to 12 years, all of whom had from moderate to profound hearing loss. In Group I were 19 neurologically normal children who had presented with stable audiograms on previous repeated testing. In Group II were 16 children having "various degrees of neurological and/or development disorders which made reliable audiograms difficult to obtain." These children were classified as being 'difficult-to-test.' The procedure, stimuli, experimental method used, and the results obtained from testing are described. The audiometric threshold profile obtained by the heart rate audiometry was evaluated for both groups of children in terms of its agreement with the audiometric threshold obtained by using the conventional behavioral techniques. Conclusions are presented and discussed. "It is suggested that heart rate audiometry may be a useful diagnostic tool for the 'difficult-to-test' child."

427. Schulte, F.J., and Vollrath, M.: "Treatment of Haemophilus Influenzae Meningitis," *Neuropädiatrie*, 5:349-352, November, 1974.

Recent research and literature in this area are reviewed.

428. Schwarcz, Ricardo L.; Belizan, José Miguel; Cifuentes, J. Rodrigo; Cuadro, José C.; Marques, Marilia B.; and Caldeyro-Barcia, Roberto: "Fetal and Maternal Monitoring in Spontaneous Labors and in Elective Inductions," *American Journal of Obstetrics and Gynecology*, 120:356-362, October 1, 1974.

Studied by continuous monitoring and compared with regard to fetal heart rate decelerations and uterine contractility were 17 term pregnancies in which labor was spontaneous and 17 term pregnancies in which labor was electively induced. These cases and the methods of study are described. Type I dips were seen in 20.9% of the spontaneous labors and in 48.6% of the induced labors. This was a highly significant difference. Uterine contractions were found to be less intense and of greater frequency in the spontaneous labors than in the induced labors. "In both groups the intensity of contractions and the incidence of type I dips were directly related. At a given intensity the incidence of type I dips was greater in the induced labors. The higher incidence of type I dips found in the induction group could be attributed to the greater intensity of contractions and the counterpressure on the fetal head caused by a greater resistance of the birth canal. Type I dips are caused by uneven compression and deformation of the fetal head which may cause EEG alterations, cerebral lesions, and neurological sequelae. We recommend the proscription of inductions when no important medical indications justify them."

429. Schwartzman, Robert Jay: "Rehabilitation of Infantile Hemiplegia," *American Journal of Physical Medicine*, 53:75-81, April, 1974.

The cases of two children with infantile hemiplegia are presented, and the methods and results of a training program are described whereby these children "were retrained to successfully use a formerly severely paretic arm and hand. The same training methods utilized to retrain similarly damaged monkeys were employed in the therapy of these children. It is thought that pathways originating in the red nucleus and projecting to the anterior horn cells of the spinal cord are utilized in this recovery."

430. Sciarra, John J.; Tagatz, George E.; Notation, Albert D.; and Depp, Richard: "Estriol and Estetrol in Amniotic Fluid," *American Journal of Obstetrics and Gynecology*, 118:626-642, March 1, 1974.

Investigations regarding estetrol (E_4) are historically reviewed. In order to determine clinical applications, a method for the radioimmunoassay of total estrogens (TE), unconjugated estriol (E_3), and unconjugated estetrol (E_4) was developed and is described. The concentrations of these hormones were then determined in 46 amniotic fluid samples from 13 normal obstetric patients who were classified as high risk, five diabetic patients, and nine patients whose pregnancies were complicated by Rh sensitization. Also analyzed for TE, E_3, and E_4 were 33 serum samples from six patients who were in their last trimester of pregnancy. Findings regarding each of these groups of patients are presented, comment is made, and a discussion by Drs. John W. Greene, Jr., Roger D. Kempers, and Sciarra is conducted. "There is little indication from this study that the concentration of unconjugated E_4 in amniotic fluid is of predictive value for the diagnosis of fetal compromise."

431. Seeds, A. Elmore, and Escarcena, Luis: "Prevention and Correction of Fetal Acidosis and Hypoxia," *Clinical Obstetrics and Gynecology*, 17:3:115-134, September, 1974.

The methods of recognizing before labor those fetuses who are at high risk for inadequate placental function and intrauterine hypoxia are outlined. These methods are the determination of maternal estrogen excretion, the oxytocin challenge test, ultrasonic measurement of the biparietal diameter, and amniocentesis. Then considered is the management in labor of such cases, including the monitoring of the fetal heart rate and fetal scalp blood sampling. It is concluded that "accurate assessment of placental function [could] identify many fetuses vulnerable to distress before labor. This would allow earlier delivery in which labor could be avoided or followed with careful monitoring. All methods currently employed to treat hypoxia and acidosis of the fetus in utero are inadequate in the presence of significant fetal distress, and prompt delivery becomes mandatory."

432. Seller, Mary J.; Singer, J.D.; Coltart, T.M.; and Campbell, S.: "Maternal Serum-Alpha-Fetoprotein Levels and Prenatal Diagnosis of Neural-Tube Defects," *Lancet*, 1:428-429, March 16, 1974.

Blood samples were obtained throughout pregnancy from women delivering fetuses with severe neural-tube defects, from women delivering normal fetuses, and from non-pregnant women. Serum-alpha-fetoprotein (A.F.P.) levels were determined in these patients and compared. Higher levels were seen in the women delivering fetuses with severe neural-tube defects from the second trimester onwards, "but the difference was not always clear-cut, rendering such a test less reliable than assay of the amniotic-fluid A.F.P. The blood-A.F.P. levels of seven anencephalic fetuses were normal for their gestational age, suggesting that there is no increased synthesis of A.F.P. in fetuses with severe neural-tube defects."

433. Seppälä, Markku: "Alpha-Fetoprotein in the Management of High-Risk Pregnancies," *Clinics in Perinatology*, 1:293-300, September, 1974.

Studies are summarized relevant to alpha-fetoprotein levels in maternal serum during normal pregnancy, in cases of abortion, in cases of intrauterine fetal death, and in high-risk late pregnancies. Also reviewed are studies concerned with alpha-fetoprotein levels in amniotic fluid including investigations dealing with elevated levels found in association with neural tube defects.

434. Seppälä, Markku, and Ruoslahti, Erkki: "Alpha Fetoprotein: Physiology and Pathology During Pregnancy and Application to Antenatal Diagnosis," *Journal of Perinatal Medicine*, 1:104-113, 1973.

Described are the results of a study of the alpha fetoprotein (AFP) concentration and its clinical significance in normal and abnormal pregnancies. A radioimmunoassay method was used to measure the AFP concentrations in an early human conceptus, in maternal serum, and in amniotic fluid. Among the findings reported are the concentration conceptus; the AFP concentration found in the maternal serum of normal pregnancies (204), diabetic pregnancies (20), pregnancies complicated by toxemia or hypertension (74), and pregnancies complicated by liver disorder (27); the maternal serum AFP concentrations in 22 cases of intrauterine fetal death; assessment of severe fetoplacental dysfunction by the determination of the AFP concentration; the AFP concentrations in the amniotic fluid of 55 normal pregnancies; and the AFP concentrations in the amniotic fluid of four high risk pregnancies. These preliminary results indicate "that the AFP concentrations of both maternal serum and amniotic fluid can be useful in the assessment of fetal state in high risk pregnancies."

435. Sgoutas, Demetrios, and Jones, Rosanne: "Quantitation of the Lecithin/Sphingomyelin Ratio in Amniotic Fluid by a Simple Charring Method," *American Journal of Obstetrics and Gynecology*, 119:929-931, August 1, 1974.

The charring method of Marsh and Weinstein is described as are the results when the method was employed. "The method involved scraping of the spots of interest into test tubes, charring with concentrated sulfuric acid under well-controlled conditions, and determination of the absorbance at 375 mμ."

436. Shapiro, Irving: "Newborn Hearing Screening in a County Hospital," *Journal of Speech and Hearing Disorders*, 39:89-92, February, 1974.

Described is the neonatal hearing screening program developed at the Los Angeles County Harbor General Hospital, its results, and its problems. Over 4,000 newborns were screened in a 15-month period. "The failure of parents to bring infants in for follow-up and the problems of keeping trained volunteer testers resulted in termination of the program."

437. Sharrard, W.J.W., and Bernstein, S.: "Equinus Deformity in Cerebral Palsy," *Journal of Bone and Joint Surgery*, 54B:272-276, May, 1972.

A study was conducted to compare elongation of the tendo calcaneus with recession of the gastrocnemius tendons as methods of treating equinus deformity in cerebral palsy. A total of 92 cerebral palsied children who had operations for equinus were reviewed. Fifty-seven of these patients were followed. The indications for and the technique of the operations are described as are the results with these patients, regarding recurrence, distribution of the paralysis, gait and function, and complications. Three conclusions are presented.

438. Shephard, B.; Buhi, W.; and Spellacy, W.: "Critical Analysis of the Amniotic Fluid Shake Test," *Obstetrics and Gynecology*, 43:558-562, April, 1974.

In order "to determine the sensitivity and specificity of the 'foam test' in predicting the L/S ratio," a total of 121 amniotic fluid samples were obtained from 119 women between 22 to 43 weeks of pregnancy. The specimens were analyzed as described for foam stability, L/S ratio, creatinine content, amniotic fluid/maternal blood creatinine ratio, and bilirubin (ΔOD_{450}). Clinical information on these women and their neonates was also obtained. The foam or shake test was found to be "easy to perform and the results compare favorably with other amniotic fluid parameters of fetal maturity." "It was found that in comparison to the L/S ratio, the foam or shake test had a false-positive rate of 18% and a false-negative rate of 7%. This was found to be as sensitive and specific or better than the other fluid parameters." "In this small series the prediction of neonatal RDS was as accurately made with the foam test as with the L/S ratio. Since the test is so easy to perform, it is recommended that it be made available to all obstetricians managing occasional high-risk pregnancies. If a significant number of such determinations are necessary, the adjunct laboratory should develop the ability to determine the L/S ratio or lecithin concentration, as these appear to be slightly more reliable."

439. Sherwin, Marjorie E.: "Adapting a Walker for Stairs," *Physical Therapy*, 54:867, August, 1974.

Adjustments that can be made to a standard walker to aid patients in negotiating stairs are explained, and the use of such a walker is pictured.

440. Shnider, Sol M., and Moya, Frank, eds.: *The Anesthesiologist, Mother and Newborn.* Baltimore: Williams & Wilkins, 1974.

This volume contains 31 chapters presented in four sections and written by 20 contributing authors. In Section I the "Basic Principles in Obstetric Anesthesia" are discussed, and the concern of Section II is the "Controversial Aspects of Obstetric Anesthesia." Aspects of "The Fetus and Newborn" are considered in the articles in Section III, including antepartum fetal evaluation, monitoring of the fetal heart rate, fetal scalp sampling, intrauterine asphyxia and the respiratory distress syndrome. Section IV is devoted to articles on the "Mechanical Ventilation of the Newborn Infant." There are many illustrations and bibliographies after most chapters.

441. Shutt, Donald A.; Smith, Ian D.; and Shearman, Rodney P.: "Fetal Plasma Steroids in Relation to Parturition. III. The Effect of Parity, and Method of Delivery Upon Umbilical Plasma Oestrone and Oestradiol Levels," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:968-970, December, 1974. (Series: For I see #448; II see #449.)

Umbilical venous blood samples were obtained after delivery from 16 patients, who had spontaneous labor and vaginal delivery, and 19 patients delivered by cesarean section, 15 of whom were not in labor. Estrone and estradiol levels were then measured in these samples as described. The mean levels for both estrone and estradiol were found to be significantly higher in the vaginally delivered primiparous patients than in the vaginally delivered multiparous women. These two groups did not differ significantly in duration of labor. Parity did not affect estrone and estradiol levels in the patients delivered by cesarean section. In both the primiparous and multiparous women, the mean ratio of estrone to estradiol in the umbilical venous plasma was found to be significantly higher in the vaginally delivered patients than the mean ratio in those patients delivered by cesarean section. Findings are discussed and related to other studies. "It is concluded that in spontaneous delivery at term the changes in placental metabolism associated with established labour are typified by an alteration in oestrone to oestradiol ratios with an elevation of the oestrone levels in umbilical venous plasma. The highest umbilical venous oestrone levels were found in primiparous patients after spontaneous vaginal delivery and this may reflect on increased metabolic activity associated with labour in those patients."

442. Sibley, William A.: "Diagnosis and Treatment of Epilepsy: Overview and General Principles," *Pediatrics*, 53:531-535, April, 1974.

Included among the diagnostic aspects discussed are the consideration of the age of the patient and consideration of the type of seizure. Then the principles of therapy are explained, including drug selection.

443. Simon, G.B.: "A Teachers' Guide to 'Drugs,'" *Special Education: Future Trends*, 1:25-28, March, 1974.

Drugs commonly used in the treatment of handicapped children are reviewed in order that teachers may be made familiar with them and their uses and effects. Among the types of drugs discussed are anticonvulsants, stimulants, and night

sedatives or hypnotics. A "Table of Names and Substances" is included so that teachers will be able to recognize substances in common use.

444. Singh, Eric J.; Mejia, Alfonso; and Zuspan, Frederick P.: "Studies of Human Amniotic Fluid Phospholipids in Normal, Diabetic, and Drug-Abuse Pregnancy," *American Journal of Obstetrics and Gynecology*, 119:623-629, July 1, 1974.

Amniotic fluid samples were obtained from normal, diabetic, and drug-abuse patients, and the phospholipids were determined and studied as described. Among the findings were: "The lecithin/sphingomyelin (L/S) ratios correlate well with gestational age only in normal human pregnancy. The level increases dramatically near term. Good correlation is noted between the higher L/S ratio and respiratory function. There is a higher level of palmitic acid (16:0) in phosphatidyl choline at term than in earlier gestation. The palmitic acid level in phosphatidyl choline is of diagnostic value for the maturity of the fetus in normal human pregnancy. Diabetes mellitus (Classes A, B, and C) and the drug methadone delay maturation of the fetal lung; therefore, the L/S ratios correlate poorly with gestational age as compared with normal pregnancies."

445. Singh, Eric., and Zuspan, Frederick P.: "Content of Amniotic Fluid Prostaglandins in Normal, Diabetic, and Drug-Abuse Human Pregnancy," *American Journal of Obstetrics and Gynecology*, 118:358-361, February 1, 1974.

Amniotic fluid was collected from normal, diabetic and drug-abuse obstetric patients, and the prostaglandins were extracted and quantified with methods described. Three periods of gestation were differentiated. The amounts of the prostaglandins and the percentage composition of the prostaglandins were found to remain the same in the three gestational periods, but the prostaglandins showed significant increases in term in all of the patient groups. "The dominating fraction was PGF_{2a} among primary prostaglandins. The average values of PGF_{2a} at labor were (in nanograms per milliliter): normal, 30.0; diabetic, 26.0; methadone, 23.0; heroin, 25.0 - which was five to six times greater than nonlabor values in all groups. Comparisons between normal, diabetic, methadone, and heroin patients' prostaglandin F_{2a} were not significant."

446. Sisson, Thomas R.C.; Knutson, Susan; and Kendall, Norman: "The Blood Volume of Infants. IV. Infants Born by Cesarean Section," *American Journal of Obstetrics and Gynecology*, 117:351-357, October 1, 1973.

Studied were the effects of early and late clamping of the cord and the position of the cesarean section delivered infant on the blood volume of the infant at 3 1/2 to 4 hours of age. Total blood, plasma, and red cell volumes were determined in 23 term infants delivered by cesarean section. Maternal history of the patients and information on the infants are presented. The infants were placed in 1 of 3 groups: those whose cords were clamped immediately (A), those on whom clamping was "delayed for 180 seconds while the infant was held 15 cm. below the level of the vagina" (B) and those on whom clamping was "delayed for 180 seconds while the infant was held 15 cm. above the mother's abdominal wall" (C). The highest volumes were seen in the Group B infants, the lowest volumes were noted in the Group C infants, and the volumes for the Group A infants fell

between those of the other two groups. "The smaller values determined in Group C must represent an actual loss of blood - a fetoplacental transfusion."

447. Smart, J.L.: "Activity and Exploratory Behavior of Adult Offspring of Undernourished Mother Rats," *Developmental Psychobiology*, 7:315-321, July, 1974.

The behavior of offspring of mother rats who had been adequately fed during much of pregnancy and lactation (controls - C) was compared to the behavior of offspring of mother rats who had been undernourished during much of pregnancy and lactation (undernourished - UN). All offspring had free access to food after weaning. At between 15 to 27 weeks of age, the adult offspring were tested as described using Lát boxes and Skinner Boxes. "During repeated exposures on the same day in a rectangular observation box, UN rats moved about more and reared on their hind legs more often than controls, but defecated less frequently. Two measures of exploratory behavior, tendency to emerge from a familiar to an unfamiliar area and responsiveness to a novel object, did not differentiate the 2 groups nor did control and UN rats differ in the rate at which they pressed a lever to produce a light stimulus in a dark Skinner box. These and other, long-term, activity studies indicate that previously undernourished rats are more active than controls in familiar, nonstressful conditions." Results are discussed and conclusions are presented.

448. Smith, Ian D., and Shearman, Rodney P.: "Fetal Plasma Steroids in Relation to Parturition. I. The Effect of Gestational Age Upon Umbilical Plasma Corticosteroid Levels Following Vaginal Delivery," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:11-15, January, 1974. (Series: For II see # 449; III see #441.)

Total plasma corticosteroid levels were measured as described in matched samples of umbilical arterial and venous blood which were obtained immediately after vaginal delivery in 234 infants, of which 153 infants were delivered after spontaneous labor and 81 infants after oxytocin-induced or oxytocin-augmented labor. Gestational age was accurately known in these cases. The relationship was then determined between the umbilical arterial and venous plasma levels of total corticosteroids and the gestational age at birth and the type of labor. "Both arterial and venous levels were related to the gestational age of the infant at delivery, rising to a peak at 37 to 38 weeks gestational age and thereafter declining. Corticosteroid levels were generally less in infants delivered following oxytocin-induced (or augmented) labour than in those delivered following spontaneous labour." These relationships are presented in a chart and a graph and are discussed. "The results suggest that the human fetal adrenal may have an active role in fetal maturation and the initiation of labour."

449. Smith, Ian D., and Shearman, Rodney P.: "Fetal Plasma Steroids in Relation to Parturition. II. The Effect of Gestational Age Upon Umbilical Plasma Corticosteroids Following Hysterotomy and Caesarean Section," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:16-19, January, 1974. (Series: For I see #448; III see #441.)

Total plasma corticosteroid levels were measured as described in matched samples of umbilical arterial and venous blood which were obtained from 78 infants after delivery by cesarean section. Of these 78 infants, delivery was by elective

cesarean section in 47 cases and by emergency cesarean section in 31 cases. Gestational age was accurately known in these cases. The relationship was then determined between the umbilical arterial and venous plasma levels of total corticosteroids in these cases and the gestational age and the type of cesarean section delivery. Heart blood levels of plasma corticosteroids were also determined in nine fetuses obtained by hysterotomy at 12 to 16 weeks of gestation. Findings are presented and related to those presented in Part I of this series. "Levels of total corticosteroids in umbilical cord plasma following delivery by elective Caesarean section were considerably less than those found by Smith and Shearman (1974) following vaginal delivery associated with either spontaneous or induced labour; at 38 to 40 weeks gestation these differences were very highly significant for both arterial and venous plasmas ($P < 0.001$). In the emergency Caesarean section group, plasma corticosteroids levels were significantly elevated when the mother was in established labour and such levels did not differ significantly from those following vaginal delivery. On the other hand, within this group, when the mother was in early labour, the mean arterial level did not differ significantly from that found after elective Caesarean section, although the venous level was slightly elevated."

450. Smith, J.F.; Reynolds, E.O.R.; and Taghizadeh, A.: "Brain Maturation and Damage in Infants Dying from Chronic Pulmonary Insufficiency in the Postneonatal Period," *Archives of Disease in Childhood*, 49:359-366, May, 1974.

Eleven infants, having chronic pulmonary insufficiency, born at from 24 to 26 weeks gestation with birthweights of from 750 to 2,000 g., and surviving for from 29 days to 13 months were studied regarding clinical features and brain maturation damage. "All the infants displayed abnormal neurological signs; 3 had fits, 2 appeared decerebrate after severe hypoxic episodes on the last day of life, and all at some time showed abnormalities of posture, tone, responsiveness, or development." Necropsies were performed, and pathological findings are reported, including observations on brain weight, hypoxic or ischemic damage, and local lesions.

451. Smith, Robert N., and Hanna, Lavelle: "Herpesvirus Infections in Pregnancy: A Comparison of Neutralizing Antibody Titers in Mothers and Their Infants," *American Journal of Obstetrics and Gynecology*, 119:314-319, June 1, 1974.

With methods described, serum was obtained and analyzed for neutralizing antibodies to herpesvirus from the cord blood of 100 neonates at delivery and from their mothers on the second postpartum day. In 74 of the mothers a significant concentration of neutralizing antibody was found while in 26 mothers no antibody was demonstrated. The cord blood of the infants was found to contain "in virtually every case" a concentration of antibody which was very similar to that found in the mother. It is concluded from these results that because the "IgG neutralizing antibodies in the fetus are of the same order of magnitude as those of the mother," the "determination of the maternal concentration of neutralizing antibody in women with active herpetic lesions near term may one day be of value in determining the most appropriate method of delivery." Further discussion is conducted by Drs. James C. Caillouette and Smith.

452. Sobotka, Thomas J., and Cook, Michelle P.: "Postnatal Lead Acetate Exposure in Rats: Possible Relationship to Minimal Brain Dysfunction," *American Journal of Mental Deficiency*, 79:5-9, July, 1974.

For three weeks postnatally male rats received daily oral doses of 0, 9, 27, or 81 mg/kg lead acetate. No visable differences, including signs of neurotoxicity, were noted between the experimental and control animals. However, as weanlings in the described testing, the experimental rats displayed as described the following "pharmacobehavioral characteristics" which are similar to those seen in minimally brain dysfunctioned children: "(a) altered responsiveness to amphetamine," "(b) poor learning performance," and "(c) alleviation of this performance by amphetamine treatment." "These data support the suggestion that perinatal lead exposure may be etiologically related to some variants of minimal brain dysfunction."

453. Society for Research into Hydrocephalus and Spina Bifida. *Studies in Hydrocephalus and Spina Bifida*. London: Spastics International Medical Publications in association with Heinemann Medical Books, 1974. 160 pp. (Supplement to *Developmental Medicine and Child Neurology*, No. 32.)

The proceedings of a meeting held by the above Society in Gothenburg in June of 1974 are contained in this Supplement. This is the tenth such supplement on hydrocephalus and spina bifida to be issued. Selected papers presented at this meeting are included along with two papers not presented at the meeting, and summaries of other papers presented at the meeting. Aspects considered in the articles include etiology, treatment, management, and diagnosis including articles on the estimation of alpha-fetoprotein in amniotic fluid.

454. Soeffing, Marylane Y.: "BEH Officials Identify and Discuss Significant Federal Programs for the Handicapped," *Exceptional Children*, 40:437-442, March, 1974.

The author asked the administrators of six major programs in the Bureau of Education for the Handicapped (BEH) to discuss their programs with her. The areas of BEH considered are the Handicapped Children Research Program, the Division of Training Programs, the Aid to States Branch, Regional Deaf Blind Centers, the Captioned TV Project, and the Early Childhood Program.

455. Sokol, Robert J.; Rosen, Mortimer G.; Borgstedt, Agneta D.; Lawrence, Ruth A.; and Steinbrecher, Margaret: "Abnormal Electrical Activity of the Fetal Brain and Seizures of the Infant," *American Journal of Diseases of Children*, 127:477-483, April, 1974.

Of special concern in this article is the relationship between the fetal electroencephalographic (FEEG) patterns and the abnormal electroencephalographic findings seen in infants having early clinical seizure activity. The technique of FEEG is briefly described, and four case reports are presented of infants displaying seizure activity, who had had "previously recorded, unusual fetal electroencephalographic patterns." Discussed are the technical adequacy of the FEEG, the abnormalities seen in the fetal EEG and the neonatal EEG, the cause of brain damage, and the use of the FEEG as a prognostic tool. Three conclusions

are presented: "1. With appropriate technique, an adequate and useful FEEG can be recorded. 2. That factors in the cause of neonatal seizures, in particular, and perinatal brain damage, in general, may be operant prenatally is established in the FEEG by the presence of abnormal electrical activity prior to birth in infants with later neurological abnormalities. 3. The presence of persistent sharp-wave activity, prolonged low voltage, and periodic trace in the FEEG has been associated with later, abnormal neurological development."

456. Soule, A. Bradley, III; Standley, Kay; Copans, Stuart A.; and Davis, Miryam: "Clinical Uses of the Brazelton Neonatal Scale," *Pediatrics*, 54:583-586, November, 1974.

The Brazelton Neonatal Assessment Scale and its uses are explained. The test was administered as described to 19 babies of heroin-addicted mothers on methadone and to 41 normal control babies. Scores on the Brazelton Scale clearly differentiated the babies in drug withdrawal. The typical behavior of these infants is described. The scores were also useful in providing information on the course of these sick infants. "This study has shown the Brazelton Neonatal Assessment Scale to be a sensitive and reliable index of some characteristic behaviors of one group of sick babies. It suggests that systematic observation of newborn behaviors can be an important clinical tool, a helpful adjunct in diagnosis and management."

457. Spain, B.: "Verbal and Performance Ability in Pre-school Children with Spina Bifida," *Developmental Medicine and Child Neurology*, 16:773-780, December, 1974.

A group of 145 three-year-old children with spina bifida were given a series of described tests to determine their verbal and performance abilities. Findings are presented separately for the non-verbal and for the verbal tests. Hand-eye coordination and performance were measured on the non-verbal tests, and comprehension of language and expression were measured in the verbal tests. "Those children requiring a shunt to control their hydrocephalus (96) showed lower mean scores on all tests than the children without shunts, particularly in the non-verbal tests. Only one-third of the children with shunts seemed to be developing normally. The presence of a shunt was also associated with moderate or severe physical handicap. Children with shunts and with below average performance scores also tended to show poor verbal scores, and 40 per cent of this group were rated as hyper-verbal. A characteristic pattern of scores was found for these children on the verbal scales, with good syntax but poor comprehension and inability to use language creatively." Factors contributing to these findings are discussed.

458. Speidel, B.D., and Meadow, S.R.: "Maternal Epilepsy and Abnormalities of the Fetus and Newborn," *Lancet*, 2:839-843, October 21, 1972.

The outcome of pregnancy was retrospectively studied in the 427 pregnancies of 186 epileptic women. Findings were compared to those from a group of 180 control women. Major congenital malformations were found in 17 babies of 16 epileptic mothers while seven of the babies of the control mothers had malformations. All of the 16 epileptic mothers were taking anticonvulsant drugs. These

cases are further described. Some 1.5% of the children of the epileptic mothers were mentally subnormal as compared with 0.2% of the children of the control mothers. The perinatal mortality rate was 38.6 per 1,000 in all the pregnancies of the epileptic women, and 42.5 per 1,000 in the pregnancies of the epileptic women taking anticonvulsants. These and other findings are discussed.

459. Spellacy, W.N.: "Peptide Hormones in Assessing Fetal Status," *Clinics in Perinatology*, 1:65-72, March, 1974.

Human chorionic thyrotropin, human chorionic gonadotropin, and human placental lactogen are reviewed with respect to their usefulness in assessing fetal status.

460. Spellacy, W.N.; Buhi, W.C.; Birk, S.A.; and McCreary, S.A.: "Distribution of Human Placental Lactogen in the Last Half of Normal and Complicated Pregnancies," *American Journal of Obstetrics and Gynecology*, 120:214-223, September 15, 1974.

The persistently high perinatal mortality rate and approaches which have been taken to reduce it are discussed. The possible usefulness of the measurement of serum human placental lactogen (HPL) in determining placental function was studied by using a radioimmunoassay technique to measure serum HPL in 7,443 samples obtained from 1,814 pregnant women who were in the latter half of pregnancy. Of these samples, 3,014 were from 804 women having normal pregnancies. These cases confirmed the concept of the fetal danger zone (F-D zone) which had been previously developed, and which was defined to include those cases in which the HPL values were less than 4 μg per milliliter after 30 weeks of gestation. The cases of Rh senitization, diabetes mellitus, and toxemia in the series were then reviewed in terms of the frequency of HPL values falling into the F-D zone. "The major factor which appears to lower HPL values is vascular disease," and thus "it would appear that the measurement of HPL in women with potential vascular disease will help to identify those with concurrent abnormal placental function." Further discussion is conducted by Dr. W. E. Easterling, Jr.

461. Spellacy, W.N.; Buhi, W.C.; and McCreary, S.A.: "Measurement of Human Placental Lactogen with a Simple Immunodiffusion Kit (Plac-♀ Gest®), *Obstetrics and Gynecology*, 43:306-309, February, 1974.

The disadvantages of measuring human placental lactogen (HPL) by radioimmunoassay are noted, and "a simple nonradioactive immunodiffusion kit system" to determine serum HPL levels is described. Both methods were used to simultaneously measure the HPL levels in 302 serum samples and results were compared. The kit system was found to be "easy to use and produced reliable results."

462. Spira, Ralph: "Contribution of the H-Reflex to the Study of Spasticity in Adolescents," *Developmental Medicine and Child Neurology*, 16:150-157, April, 1974.

The H-reflex and its use in the evaluation of spasticity are discussed. The H max/M max ratio (the largest amplitudes of the H-reflex/direct motor [m] wave) was measured in the triceps muscles of the legs of 21 adolescents with severe spasticity who were divided into four described groups. Results are presented

concerning the comparison of the H/M ratios in the left and the right legs of the individual patients and also regarding the comparison in ten patients of the H/M ratios before and after a period of 6 to 8 months during which seven subjects engaged in "controlled activities directed to the lower limbs" and three did not participate in any such activities. "The results showed considerable increases of the ratio in all cases studied. This is taken to indicate an increase of the reflex motor neuron excitability. No correlation was found between the increase of the H/M ratio and degree of clinical spasticity. In cases where the degree of clinical spasticity differed grossly from one leg to another, the H/M ratio invariably showed a distinctly higher value in the more spastic limb. When investigations were repeated after a period of several months of controlled activities directed to the lower limbs, they showed a trend to reduction of the H/M ratio. These results suggest that H reflex investigations might be used for estimation of the degree of spasticity in affected children. This method might also help in objectively evaluating the response to various therapeutic and rehabilitative measures undertaken in these patients."

463. Spirer, Z.; Weisman, J.; Yurman, S.; and Bogair, N.: "Hyperglycaemia and Convulsions in Children," *Archives of Disease in Childhood*, 49:811-813, October, 1974.

Reported are the authors' experience with blood glucose levels in 33 children having febrile convulsions and six children with epilepsy. Blood glucose levels were determined immediately after or during a convulsion. In 22 of the children the levels were over 120 mg/100 ml and in six the levels were over 200 mg/100 ml. Levels were normal two hours after the convulsion.

464. Sproule, W.B.; Greene, M.E.; and Whitfield, C.R.: "Amniotic Fluid Bubble Stability Test as a Screening Procedure for Predicting the Risk of Neonatal Respiratory Distress," *American Journal of Obstetrics and Gynecology*, 119:653-656, July 1, 1974.

In order to evaluate the value of the bubble stability test (BST) in predicting the risk of neonatal respiratory distress, 365 amniotic fluid samples were obtained from 269 patients, and the BST was performed. Findings were compared to the L/S ratio results, gestational age, and clinical outcome. "It is concluded that the bubble-stability test is a useful screening procedure for predicting the risk of neonatal respiratory distress. For this purpose, it need only be performed in a 1 in 2 dilution of amniotic fluid. A positive result at this dilution indicates that respiratory distress is most unlikely to occur if the baby is delivered without delay, but a negative result calls for a more direct measurement of fetal pulmonary surfactant in the amniotic fluid, e.g., the lecithin: sphingomyelin ratio or lecithin concentration.

465. Stallone, Laura Ann, and Ziel, Harry K.: "Management of Gestational Diabetes," *American Journal of Obstetrics and Gynecology*, 119:1091-1094, August 15, 1974.

One hundred cases of gestational diabetes, as defined, were studied. In this series there was a perinatal mortality rate of 1% and a perinatal morbidity rate of 8% with "half of this morbidity caused by birth trauma secondary to macrosomia with difficult vaginal delivery. Excessive fetal size appeared to

be strongly associated with a maternal history of macrosomia. This significant morbidity secondary to macrosomia suggests a more liberal use of cesarean section when the fetal weight is estimated to be greater than 9 lbs."

466. Starkey, M. Cathy: "Cutout Seat Board," *Physical Therapy*, 54:969-970, September, 1974.

A diagram of such a board, measurement and construction methods, and the benefits from the seat board in preventing ischial pressure sores are presented.

467. Stauffer, Donald T.: "Disability Simulation," *Physical Therapy*, 54:1084-1085, October, 1974.

Described is a disability simulation experiment, conducted by students in a class on the psychology of the physically handicapped. Students used crutches and wheelchairs and were "asked to be aware of the attitudes of other people, personal feelings, and architectural barriers." Comments by the students on their experiences are included.

468. Stein, Sherman C.; Schut, Luis; and Ames, Mary D.: "Selection of Early Treatment in Myelomeningocele: A Retrospective Analysis of Various Selection Procedures," *Pediatrics*, 54:553-557, November, 1974.

Lacunar skull deformity (LSD), a common X-ray finding in newborns with myelomeningocele, is discussed with regard to its relationship to mental retardation. Findings are then presented on a review of 163 children with myelomeningocele who had had early treatment and who had been followed up for evaluation. Neonatal findings in these cases were correlated with outcome in an attempt to develop a selection protocol for early treatment. Findings regarding the ability of the various selection criteria to predict the outcome in these cases are described. LSD was found to be strongly related to eventual mental retardation. Thus according to the protocol developed, "early surgery is not recommended for children having both LSD and multiple adverse physical findings or those with associated gross congenital anomalies. The proposed protocol is shown to be of considerably greater reliability in predicting outcome among our cases than existing selection criteria." Application of the protocol is discussed as are further aspects to be considered.

469. Stephen, E., and Hawks, G.: "Cerebral Palsy and Mental Subnormality," in *Mental Deficiency: The Changing Outlook*, 3rd edition edited by Ann M. Clarke and A.D.B. Clarke. London: Methuen and Co., 1974. Pp. 482-523, Chapter 16.

The authors explain the definition, prevalence, and classification of cerebral palsy, and then discuss etiology, the association of cerebral palsy with mental subnormality, and associated defects. The assessment of intellectual functioning in the cerebral palsied, personality factors, and educational aspects are also considered. A bibliography is included in the chapter.

470. Stewart, Ann L., and Reynolds, E.O.R.: "Improved Prognosis for Infants of Very Low Birthweight," *Pediatrics*, 54:724-735, December, 1974.

Reported are the outcome and methods of a program conducted in the Neonatal Unit of University College Hospital, London, for the intensive care of infants weighing 1500 gm or less at birth. From 1966 to 1970, 197 infants were cared for in this Unit. Described are the obstetric care at the hospital and the neonatal care of these infants. Of the 197 infants, 98 survived and 95 of the 98 were followed up with repeated physical and developmental assessments. Follow-up methods are explained as are the findings for these infants during the perinatal and neonatal periods, at autopsy, and at follow-up. "The results showed that 86 (90.5%) of the children had no detectable handicap, 4 (4.2%) had physical handicaps only, and 5 (5.3%) had mental handicaps, including two children with physical handicaps. The incidence of handicap was very much greater among infants presumed to have been severely hypoxic than among the remaining infants." Aspects of the study discussed include the survival rate, the follow-up of the infants, the cause of death, and the cause of handicap. Implications and conclusions are presented. "We conclude that intensive care can both increase the chance of survival for infants of very low birthweight and reduce the incidence of serious handicap in survivors."

471. Stewart, David J.: "Teeth as Indicators of Exposure of Children to Lead," *Archives of Disease in Childhood*, 49:895-897, November, 1974.

Atomic absorption spectrophotometry was used as described to assess the lead content in carious primary molars extracted from 310 children in Northern Ireland, ages 3 to 10 years. The teeth were divided into groups on the basis of the age of the child and the following three residential areas in which the children lived: (1) An urban group, (2) a suburban group, and (3) a rural group. "Tooth lead content increased with age and was influenced by the nature of the donor's environment. Lead concentrations were greatest in the teeth of children in the urban group and least in the rural group, with suburban specimens intermediate." This technique would seem to be suitable for future use in measuring lead uptake in children and would allow for comparisons among communities to be made.

472. Stokes, John D., and Scudder, Charles L.: "The Effect of Butylated Hydroxyanisole and Butylated Hydroxytoluene on Behavioral Development of Mice," *Developmental Psychobiology*, 7:343-350, July, 1974.

Other studies concerned with the effects of these preservatives are reviewed. Pregnant mice and their offspring were fed either a normal described diet (controls), the same normal diet contaminated with .5% butylated hydroxyanisole (BHA), or this same diet containing .5% butylated hydroxytoluene (BHT). Described behavioral tests were conducted in all three groups of pups beginning at 6-7 weeks of age. "Compared to controls, BHA-treated offspring showed increased exploration, decreased sleeping, decreased self-grooming, slower learning, and a decreased orientation reflex. BHT-treated offspring showed decreased sleeping, increased social and isolation-induced aggression, and a severe deficit in learning."

473. Stott, D.H.: "Follow-Up Study From Birth of the Effects of Prenatal Stress," *Developmental Medicine and Child Neurology*, 15:770-787, December, 1973.

With selection methods described, 153 mothers in Scotland were interviewed by health nurses during the first month after the birth of their infants and at regular intervals thereafter until the child reached the age of four years. In formation was obtained on the pregnancies of these women and the subsequent health and development of their babies. "The object was to explore the relationships between child morbidity and a wide range of possibly noxious factors in pregnancy." Methods of classifying and assessing child morbidity and method: of classifying conditions in pregnancy are explained. "No relationship was found between the children's health and physical illness, accidents, work stresses or dental operations in the mothers. Situational stresses such as the death or severe illness of family member, or shocks and frights, experienced by the expectant mother were also not significant. On the other hand, stresses involving severe, continuing personal tensions (in particular marital discord) were closely associated with child morbidity in the form of ill-health, neurological dysfunction, developmental lag and behaviour disturbance." These and other findings are discussed, and implications are discussed.

474. Strach, E.H.: "Methods of Bracing in the Rehabilitation of the Paraplegic Child, *Paraplegia*, 11:137-143, August, 1973.

Steps to be taken toward the achievement of standing and walking in the child with spina bifida and severe paraplegia are discussed, and appliances used are pictured. This process should be begun at age 14 to 16 months in these children The requirements of bracing in spina bifida are listed as are the advantages of walking to the child with spina bifida and the dangers of wheelchair life in such patients. Also presented are the results of orthopedic rehabilitation in 148 cases of severe paraplegia due to spina bifida. Of these 148 patients, 44 walked with braces most of the day without assistance, 37 walked part of the day with some assistance, 16 children could not walk, 28 died, and 20 were not followed.

475. Strauss, M.E.; Andresko, M.; Stryker, J.C.; Wardell, J.N.; and Dunkel, L.D.: "Methadone Maintenance During Pregnancy: Pregnancy, Birth, and Neonate Characteristics," *American Journal of Obstetrics and Gynecology*, 120:895-900, December 1, 1974.

Studied and compared regarding these factors were 72 pregnant heroin addicts, who were treated in a low-dose methadone and comprehensive prenatal care program for at least six weeks before term, and two described groups of controls, consisting of 36 women in each group who were not addicted. "Rates of pregnancy illness, pregnancy complications, as well as labor and delivery characteristics, did not differ between groups. Low birth weight ($\leq$2,500 grams) was not more common among addicted infants, although neonatal weight loss was greater in this group. Most addicted newborns were symptomatic, but pharmacologic treatment was required in only 30 per cent of the cases." On the basis of the findings it is concluded that "low-dose methadone maintenance in conjunction with comprehensive prenatal care appears to reduce obstetric risk to a level comparable with that of nonaddicted women of similar sociomedical circumstances."

476. Surguy, Morton: "Television Club for the Less Able," *Special Education: Future Trends*, 1:21-22, June, 1974.

"Television Club," a series of programs on the BBC for slow learners, is described.

477. Sutherland, H.W.; Bewsher, P.D.; Cormack, J.D.; Hughes, C.R.T.; Reid, Anne; Russell, G.; and Stowers, J.M.: "Effect of Moderate Dosage of Chlorpropamide in Pregnancy on Fetal Outcome," *Archives of Disease in Childhood*, 49:283-291, April, 1974.

In this study of 19 pregnancies in which the patients received "daily doses of at least 200 mg chlorpropamide for varying degrees of glucose intolerance" for varying periods during pregnancy, clinical condition of the fetus was assessed as described and related to (a) the control of maternal diabetes during pregnancy and (b) the total amount of chlorpropamide taken during pregnancy." Four cases also required insulin treatment in late pregnancy. In this series "there were 2 intrauterine deaths, 1 neonatal death, 6 babies with birthweights greater than the 90th centile, and 2 with birthweights below the 10th centile." "Though the severity of diabetes loosely correlated with the daily chlorpropamide dosage, no constant relation existed between high daily dosage of chlorpropamide and obstetric or neonatal complications. It is concluded that it is more likely to be the poor control of the maternal diabetes in pregnancy than a pharmacological effect of the chlorpropamide on the fetal pancreas which is responsible for the poor results reported."

478. Suzuki, Kotaro; Minei, Lawrence J.; and Schnitzer, L.E.: "Ultrasonographic Measurement of Fetal Heart Volume for Estimation of Birthweight," *Obstetrics and Gynecology*, 43:867-871, June, 1974.

Studied between 30 and 41 weeks of gestation were 46 normal obstetric patients. The fetal heart volume and biparietal diameter were determined by B-mode ultrasonography with these measurements performed within 20 days of parturition in 31 of these patients. The technic used to determine the heart size is explained. Good correlations were found between the fetal heart volume and both gestational age and fetal biparietal diameter with statistical data presented. "Although the fetal heart volume was not more accurate for estimating specific birthweight than the biparietal diameter, it was found to be useful for determining whether or not birthweight was greater than 2500 g."

479. Tabb, P.A.; Inglis, J.; Savage, D.C.L.; and Walker, C.H.M.: "Controlled Trial of Phototherapy of Limited Duration in the Treatment of Physiological Hyperbilirubinaemia in Low-Birth-Weight Infants, *Lancet*, 2:1211-1212, December 9, 1972.

The value of phototherapy of limited duration as treatment of physiological jaundice in low-birth-weight infants was studied in 78 infants who had birth weights of less than 2500 g and whose serum bilirubin levels were 10 mg per 100 ml or more. These 78 infants were divided into three groups: "(1) a control group of 26 infants who received no phototherapy unless their bilirubin exceeded 13 mg per 100 ml; (2) 29 who received twelve hours of phototherapy; and (3) 23 who received twenty-four hours of phototherapy." Findings indicated that 42% of the control infants required phototherapy, 24% of the infants who received 12 hours of treatment required further phototherapy and 17% of the infants who received 24 hours of treatment required additional phototherapy. An additional period of treatment was usually sufficient in these infants. Using this treatment program, the authors have "virtually eliminated" the use of exchange transfusion for physiological jaundice in their unit. "No side-effects have been observed, and this technique obviates the use of potentially dangerous drugs."

480. Takemura, H., and Fujimoto, H.: "Computer Prediction of Neonatal Conditions by Sampled Data Analyses of the Fetal Heart Rate and the Scalp Blood During Labor," *Journal of Perinatal Medicine*, 2:110-121, 1974.

Over 100 cases were continuously monitored during labor. Of these cases, those that provided complete sets of information on seven fetal parameters at each stage of labor were processed by an electronic digital computer in order to develop two computer prediction systems for the 1 and 5 minute Apgar scores and thus avoid the subjectivity involved in such evaluation. One of these prediction systems "uses discriminant analysis to differentiate the depressed infant of Apgar 7 or less from the normal of 8 or more, the other is partial regression analysis to estimate the Apgar score itself by a regression function derived from a set of fetal variables at each stage of labor." Findings with each of these two systems are reported as well as results of comparing the two computer techniques. Neither of the two techniques "could achieve a marked increase in the PCD (probability for correct diagnosis) over the results of a single pH criterion, but they did greatly improve the DRDN (diagnostic reliability for the depressed neonate), which encourages us in the further automatic monitoring of childbirths."

481. Tamby Raja, R.L.; Anderson, Anne B.M.; and Turnbull, A.C.: "Endocrine Changes in Premature Labour," *British Medical Journal*, 4:67-71, October 12, 1974.

With methods described, plasma estradiol and progesterone levels in peripheral blood were measured before and during premature labor of unknown cause in two groups of patients: "Group 1 consisted of 25 patients admitted in spontaneous permature labour and delivered within 48 hours of admission. These patients were studied only during labour. Group 2 comprised six patients who were studied serially for intervals varying from two to 17 weeks before premature labour." Levels were compared to those measured serially in 33 primigravida who had normal term pregnancies and deliveries. In 19 of the 25 women in Group 1, the estradiol levels were found to be two or more standard deviations above the mean

for gestation in the control patients. In 24 of the 25 patients the progesterone levels were within two standard deviations of the control mean. Of the six patients in Group 2, estradiol levels were seen to rise "dramatically, high values being detected one to 10 days before the onset of premature labour." "These studies suggest that the onset of premature labour is preceded by a marked increase in peripheral plasma oestradiol levels, which may be of value not only in the prediction of premature labour but also in its prevention by suppression of the premature oestradiol surge."

482. Tan, K.L., and Boon, Wong Hock: "A Simple Method of Phototherapy: Inexpensive, Blue Incandescent Bulbs," *Clinical Pediatrics*, 13:1048-1051, December, 1974.

In a premature nursery in Singapore serum bilirubin levels were determined every morning for one week in two groups of Chinese premature infants. One group of 60 infants was placed immediately after delivery in conventional incubators (controls) while the other group of 68 infants was placed in "plexiglass chambers illuminated from within by blue bulbs." These chambers and bulbs are described. "In spite of the low intensity of illumination (25 to 30 footcandles), the phototherapy group had a significantly lower mean bilirubin level. Seven of 67 control infants needed exchange transfusion, but none in the phototherapy group. The lamps were effective for 'thermotherapy' as well."

483. Taylor, E. Stewart; Hagerman, Dwain D.; Albrecht, Bruce H.; and Penney, L.L.: "Estriol Production Rate Measurement Studies in Pregnant Women," *American Journal of Obstetrics and Gynecology*, 120:752-758, November 15, 1974.

Estriol production rates were measured in pregnant women during their final trimester of pregnancy as described. "As is the case with measurement of urinary estriol excretion rates and blood estriol concentration, the range of variation of estriol production rate in the normal subjects is rather wide but the subjects with abnormal gestation so far studied are clearly distinguishable by this measurement. With further experience, this new measurement may prove to be very useful to the clinician." Further discussion is conducted by Drs. Raymond Vande Wiele, John W. Greene, Jr., A. Brian Little, and Taylor.

484. Teramo, K.; Benowitz, N.; Heymann, M.A.; Kahanpää, K.; Siimes, A.; and Rudolph, A.M.: "Effects of Lidocaine on Heart Rate, Blood Pressure, and Electrocorticogram in Fetal Sheep," *American Journal of Obstetrics and Gynecology*, 118:935-949, April 1, 1974.

The effects of lidocaine on cardiovascular and cerebral functions were studied in 13 chronically catheterized fetal sheep in utero, having gestational ages of from 122 to 142 days with term being 150 days. Also studied were the effects of the continuous infusion of the drug on newborn lambs. Results are presented separately regarding the continuous infusion of lidocaine into the fetal lambs, the continuous infusion of lidocaine into newborn lambs, and the bolus infusion of lidocaine into fetal lambs. Two different toxic effects of the drug on the lamb fetuses were seen when the drug was administered by continuous infusion or by a bolus injection. Infusion rates in the fetus "above 1 mg. · $min.^{-1}$ · $kg.^{-1}$

caused sudden, phasic increases in blood pressure in the majority of fetuses. The heart rate increased in association with each phasic increase in blood pressure." "It is concluded that lidocaine causes convulsions in the fetal sheep and that the cardiovascular changes are due to central stimulation during these convulsions. In newborn lambs lidocaine produced similar epileptiform activity associated with tonic-clonic convulsions and cardiovascular changes." "Bolus injections of lidocaine in doses of 3.0 to 22.2 mg. per kilogram of fetal weight caused an immediate decrease in blood pressure and heart rate. These changes were related to the dose of lidocaine. The convulsive dose of lidocaine as a bolus injection ranged from 8.0 to 22.2 mg. per kilogram." These and other findings are reported and discussed.

485. Tew, Brian: "SBH: Facts, Fallacies and Future," *Special Education*, 62:26-31, December, 1973.

The literature dealing with the problems of children with spina bifida and hydrocephalus (SBH) is reviewed. The four conditions of spina bifida occulta, meningocele, encephalocele, and myelocele are differentiated. Variations in the intelligence of these children are considered along with the frequent complication of visual defects. Evidence is presented regarding the cognitive skills, the perceptual-motor skills, the educational attainments, and the social skills of these children. A typical behavior called "the cocktail party syndrome" is described, and difficulties in parental reactions, school placement, and employment are discussed.

486. Tew, Brian: "Spina Bifida: Family and Social Problems," *Special Education: Future Trends*, 1:17-20, June, 1974.

Recent investigations regarding the familial and social problems resulting from spina bifida are discussed. Specific aspects considered are the anxieties experienced by the parents regarding the cause of the abnormalities, the mother's need for support, the risk involved in future pregnancies, resultant marital strains, anxieties concerned with the schooling of the child, and emotional disturbance in the child.

487. Tew, Brian, and Laurence, K.M.: "The Validity of Psychometric Studies on Children with Spina Bifida," *Developmental Medicine and Child Neurology*, 16:186-188, April, 1974.

A group of 57 children with spina bifida were given the Stanford-Binet Intelligence Scale in 1966 and were then retested five years later in 1971 using the Wechsler Intelligence Scale for Children. In 1966 the children ranged in age from four to ten years; the range in 1971 was nine to 15 years of age. The Stanford-Binet scores were transformed into equivalent Wechsler scores, and the scores from the two testings were compared. "The comparison showed highly significant correlations for nine cases with encephalocele, 16 with meningocele and 32 with myelocele, indicating that stability rather than variability is characteristic of the IQ scores of children with malformations of the central nervous system."

488. Thalme, B., and Edstrom, K.: "Intravenous Glucose Tolerance Test and Its Relation to a Scoring System for the Degree of Diabetic Fetopathy in Newborn Infants," *Journal of Perinatal Medicine*, 2:233-242, 1974.

The degree of hyperinsulinism was investigated in 26 infants of diabetic mothers (IDM) by performing an intravenous glucose tolerance test (IVGTT) during the first 24 hours following birth. This test was also performed in 12 infants of healthy mothers (IHM). The values in the IDM "showed wide variations, but were not significantly higher than the values of IHM." Then in order to investigate the hypothesis that "a better prognostic guidance of the IDM might be obtained by assessment of the combined picture of the mother's diabetic state and the appearance and behavior of the IDM," a scoring system was developed that was based on clinical and laboratory data from both the mother and infant. The individual scores were then correlated to the infant's k-value from the IVGTT. This scoring system is described as is all data on the 26 IDM and the 12 IHM. "The sum of this score correlated with the k-value ($r = 0.41$; $0.05 > p > 0.01$), but a higher correlation was found between the sum of the maternal and neonatal score and the k-value ($r = 0.51$; $0.05 > p > 0.01$)." "The scoring system proposed here might be useful for evaluation of the influence of the mother's disease upon the infant. The prognostic value is however not possible to assess fully in view of the limited number of IDM studied. In this series there were two deaths of IDM with a total score of 8 or above. The k-values of these cases were low suggesting that the combination of a high score and a low k-value might indicate a greater risk for the infant."

489. Theorell, K.: "Clinical Value of Prolonged Polygraphic Recordings in High-Risk Newborn Infants," *Neuropädiatrie*, 5:383-401, November, 1974.

Polygraphic data on respiration, ECG, surface EMG, EOG, and EEG were recorded between the fourth and the eleventh day of life on 12 full term neonates having high-risk conditions such as convulsions and/or asphyxia at birth. Findings on behavioral state, convulsions, EEG, respiration, heart rate patterns, and eye movements are presented separately for the infants having clinical convulsions during the recording, for infants having clinical convulsions before but not during the recording, for asphyxiated infants without convulsions, and for one infant with hydrocephalus and suspected herpes virus encephalitis. Numerous reproductions of recordings are presented, and "the advantages of prolonged polygraphic examinations are discussed."

490. Theorell, K.; Prechtl, H.F.R.; and Vos, J.E.: "A Polygraphic Study of Normal and Abnormal Newborn Infants," *Neuropädiatrie*, 5:279-317, August, 1974.

In a series of investigations, polygraphic data on respiration, EKG, surface EMG, EOG, and EEG were recorded to compare behavioral states "(1) between low-risk infants on the first and the fifth day, (2) between low-risk infants with early- and with late-clamping of the umbilical cord and (3) between low-risk and abnormal infants." There were 23 infants in the low risk group. Polygraphic data were recorded for all of them on their first day and for 19 of the 23 on their fifth day of life. Twelve of the 23 were placed in the early-clamped group as defined, and 11 were in the late-clamped group. Data were also recorded for 29

abnormal infants belonging to one of the following disease groups: Down's syndrome (5), bilirubinemia (10), or other high-risk conditions such as convulsions or asphyxia (14). The recording sessions lasted for six hours. The recording technique, the visual analysis of the paper writeout, the computer procedures, and the statistical methods used are explained. Findings are presented regarding all groups of infants on the study variables. "Differences could be demonstrated between various behavioural states for the recorded variables on both of the first and fifth days. The early-clamped infants differed from the late-clamped in regard to these variables on the first but not on the fifth day of life. Furthermore, differences were revealed when the results from the first day of life were compared intraindividually with those from the fifth day." Findings on the "sick infants revealed the same differences between the behavioural states as did the low-risk infants. In addition, the results for the different groups of sick infants were compared with those from the fifth day recordings from the low-risk infants. The bilirubinaemia group showed significantly slower breathing during sleep states than did the control group. The high-risk infants receiving anticonvulsant therapy exhibited rigid heart rate and minimal motility in contrast to what was observed in the control group." Implications for clinical practice are considered. Clinical data on the abnormal infants are presented in an appendix to the article.

491. Thibeault, Donald W., and Hobel, Calvin J.: "The Interrelationship of the Foam Stability Test, Immaturity, and Intrapartum Complications in the Respiratory Distress Syndrome," *American Journal of Obstetrics and Gynecology*, 118:56-61, January 1, 1974.

The foam stability test was employed as described to measure the amniotic fluid surface material within 24 hours of delivery of 106 preterm infants from 102 high-risk pregnancies. No linear correlation was found between the results of the foam stability test and gestational age. When the results of the foam stability test were negative (24 cases) there was a 96% incidence of RDS. The case fatality rate, however, was not found to be significantly related to the foam stability test results, thus "the outcome of RDS may be related to factors other than surfactant levels." Low 5 minute Apgar scores were found to be related to the case fatality rate, indicating that intrapartum complications play a role in increased mortality, and immaturity was seen to be "an independent variable in the pathogenesis of RDS" because RDS was seen to occur in immature infants with positive foam stability test results and good Apgar scores. "Our study supports the conclusion that three factors are of prime importance in the pathogenesis and outcome of RDS: surfactant deficiency, intrapartum complications, and immaturity."

492. Thompson, David, and Jones, Cliff: "Towards Integration," *Special Education: Future Trends*, 1:29-31, March, 1974.

Recent developments in the field of special education in England are reviewed. Among these is the concept of integration which is resulting in increased flexibility in the education of handicapped children. Special schools are altering teaching conditions in ways that are allowing more children to attend normal schools in later years. The program of one such special school, The Park School in Blackpool, is described as an illustration of the concept. Children attending this school receive early and continuous diagnosis and assessment

with teaching materials structured to meet specific needs of the children. "Over the past five years, 41 children have successfully transferred to ordinary secondary schools. This works out at about 40 percent of the children passing through the 10+ age group and means that from a typical class of about 20, about eight would be expected to transfer." Another possibility discussed is that such special schools may be able to act as resource centers for ordinary schools.

493. Thompson, Gary, and Weber, Bruce A.: "Responses of Infants and Young Children to Behavior Observation Audiometry (BOA)," *Journal of Speech and Hearing Disorders*, 39:140-147, May, 1974.

A total of 190 children, ages 3 to 59 months and having normal hearing and development as defined, were tested using described procedures by BOA "in an attempt to formulate a guide for clinical interpretation of BOA thresholds. The results showed that BOA thresholds are influenced by chronological age. Children who could be tested by both BOA and play audiometry consistently demonstrated lower thresholds on the latter procedure." These findings are discussed and conclusions are presented.

494. Tizard, Jack: "Early Malnutrition, Growth and Mental Development in Man," *British Medical Bulletin*, 30:169-174, May, 1974.

Aspects considered in this article include the relationship between nutrition and somatic growth, the relationship between nutrition and brain structure and function, the problems involved in assessing psychological functions, the problems involved in considering the relationships among ecology, malnutrition, and development, the results of studies in which "ill-nourished" children were compared developmentally with "somewhat better nourished children," and the sequelae seen in cases of severe malnutrition. Many studies are mentioned, and conclusions are presented.

495. Tokuhata, George K.; Digon, Edward; and Mahn, Linda: "Prenatal Care and Obstetric Abnormalities," *Journal of Chronic Diseases*, 26:163-185, March, 1973.

The literature in this area is extensively reviewed as background for the presentation of a study involving approximately 185,000 single, live births in Pennsylvania hospitals in 1967. Data was accumulated on these cases and analyzed regarding the incidence of obstetric abnormalities according to the trimester of the first medical visit for prenatal care. There were five categories of obstetric abnormalities considered: birth injury, congenital anomalies, pregnancy complications, labor complications, and prematurity. The incidence of congenital anomalies was analyzed further with regard to specific organ systems. Besides being analyzed with respect to the trimester of the first medical visit, the five categories of obstetric abnormalities were also analyzed in relation to other host factors known to influence the outcome of pregnancy. These included the sex of the offspring, the race of the mother, the age of the mother, the number of previous pregnancies, the month of delivery and the legitimacy of birth. Finally the incidence of the five categories of obstetric abnormalities were compared between Philadelphia and Pittsburgh. "The results of the present study indicate

that prenatal medical supervision is favorably associated with pregnancy outcomes, and that generally the earlier the prenatal services are provided, the better the pregnancy outcomes; this trend was most clearly indicated in pregnancy complications...Certain obstetric abnormalities, however, appear to be independent of status of prenatal care." Several shortcomings of the study are listed.

496. Tournaire, Michel; Yeh, Sze-Ya; Forsythe, Alan; and Hon, Edward H.: "A Study of Fetal Heart Rate Deceleration Areas. I. Preliminary Exploration," *Obstetrics and Gynecology*, 42:711-717, November, 1973.

In an attempt "to use fetal heart rate (FHR) deceleration areas as an objective method of evaluating FHR patterns," the records were reviewed from 86 patients in whom "marked or numerous FHR decelerations were observed during the last 60 minutes of labor immediately preceding delivery." Methods of determining the FHR and studying the FHR deceleration areas are described. "A small computer was used to evaluate three separate FHR deceleration areas timed to the duration of the concomitant uterine contraction." The FHR deceleration areas were then correlated with the pH of the umbilical artery and the Apgar score at one minute. "A reasonably good correlation was found between total FHR deceleration area and the Apgar score at 1-minute as well as the umbilical artery pH. The FHR deceleration areas which occur simultaneously with a uterine contraction should be handled differently from similar areas present after the contraction is over." Findings are evaluated.

497. "Towards the Prevention of Spina Bifida," *Lancet*, 1:907, May 11, 1974.

Recent events in research in this area are reviewed, and research steps that need to be taken before an unselected screening of pregnant women can be conducted are listed.

498. Turner, Harold: "Anesthesia and Analgesia: Adjuncts in the Dental Management of the Handicapped Child," in *Symposium; Dental Management of the Handicapped Child*, Clemens Full, editor. Iowa City, Iowa: University of Iowa, 1974. Pp. 35-45.

Information to be obtained from a complete medical history of the child is outlined in detail. Then considered is the procedure by which the best method of management for the individual child is selected. The author explains his preferences concerning drugs and techniques with the use of nitrous oxide considered in some detail.

499. Tushuizen, P.B.Th.; Stoot, J.E.G.M.; Ubachs, J.M.H.: "Abnormal Antepartum Cardiotocograms in Patients with Placental Insufficiency," *American Journal of Obstetrics and Gynecology*, 119:638-647, July 1, 1974.

Six cases are reported in which antepartum cardiotocography (CTG) was used as described to detect respiratory placental insufficiency. It is shown "that intrauterine hypoxia during pregnancy may manifest itself in the CTG in various ways." Management in such patients is considered.

500. Tyson, Patricia A.: "Handles on Forearm Crutches Facilitate One Hand Carry," *Physical Therapy*, 54:868, August, 1974.

The addition of handles to forearm crutches and the benefits of these handles are considered.

501. U.S. Department of Health, Education, and Welfare. Public Health Service. Health Services Administration. Bureau of Community Health Services. *Dental Health Projects for Children: Demonstrations of Preventive and Remedial Care.* Rockville, Maryland: DHEW, June, 1974. 12 pp. [DHEW Publ. No. (HSA) 74-5009]

In this publication are described the activities in dental care for children which have resulted from the Child Health Act of 1967. From this Act, 19 dental care projects for children have been developed to meet the needs of the communities they serve. Considered are the ways dental services are provided through the projects; the recruiting of a dentist for Emery County, Utah; the children's dental health project in Waterville, Maine; the use of trailers to give dental care to children in the Upper Peninsula of Michigan; giving dental service to migrant minority workers' children in Toppenish, Washington; the children's dental health project for retarded children at the Eunice Kennedy Shriver Center for Mental Retardation in Waltham, Massachusetts; and the training of dental technotherapists in Philadelphia. Addresses of projects in operation prior to July 1, 1974, are listed in a Directory, and Regional Offices of DHEW are also listed.

502. Umansky, Richard: "Effect of a Hand Sock on Prehension in Infancy," *Developmental Psychobiology*, 7:407-419, September, 1974.

Studied were 58 infants, ages 4 to 12 months, who were attending a well baby clinic. In testing a sock was briefly applied to one hand of the infant. Following the observance of spontaneous manual behavior, the examiner presented toys to the infant both laterally and to the midline as described. The sock was then removed for control observations. The procedure was then repeated with the other hand socked. Eight responses to the socked arm (SA) were noted and are reported. "Overall, only 4 of the 58 infants persisted in normal prehensile efforts with the SA throughout the period of handicap, although reach and grasp efforts with the SA occasionally occurred. Disuse of the SA was prominent over the entire 4-12 month age span, but changes in the pattern of disuse and in other responses to the sock handicap were noted with increasing age..., many around 6 months of age." Findings are discussed and analyzed.

503. Valenti, C.; Carnazza, V.; Guidotti, R.; and Rieder, R.F.: "Fetal Blood-Sampling in Utero," *Lancet*, 1:79-80, January 19, 1974.

An attempt was made to obtain a fetal blood sample by aspiration of the anterior placenta in 19 patients whose pregnancies were to be terminated. The procedure was successful in 11 (58%) cases. No major complications occurred. "We conclude that fetal blood can be obtained by placental aspiration when the placenta is situated anteriorly. This procedure is simple and apparently safe."

504. van den Berg, Bea J.: "Studies on Convulsive Disorders in Young Children. III. Recurrence of Febrile Convulsions," *Epilepsia*, 15:177-190, June, 1974.

Other studies in this area are reviewed. Some 19,500 infants in the described Child Health and Development Studies (CHDS) program were followed concerning the occurrence and recurrence of febrile convulsions. Findings are presented concerning the initial febrile convulsion, recurrent febrile convulsions, the age at first seizure, the risk of more than two febrile convulsions, nonfebrile convulsions following one or more febrile convulsions, and clinical features of the initial febrile convulsion. In this large group of children, 368 were found to have one or more febrile convulsions before age six years. The recurrence rate was found to be related to the age of the child at the time of the original febrile convulsion. No characteristic of the original seizure was found that was predictive of the recurrence of febrile convulsions or the occurrence of nonfebrile convulsions.

505. van den Berg, Bea J.: "Studies on Convulsive Disorders in Young Children. IV. Incidence of Convulsions Among Siblings," *Developmental Medicine and Child Neurology*, 16:457-464, August, 1974.

The weaknesses of retrospective studies in this area are discussed. In this study the prospective interview was used whereby a large group of multiparous pregnant women were questioned on the health of their previous children, including the incidence of convulsions. The infants of the current pregnancies were then followed for five years. Those children who experienced convulsions formed an index group while those who did not have any convulsions formed the control group. The interview method is explained. Of the 6,956 infants included in the study, 209 later suffered one or more convulsions, either febrile or nonfebrile. For each of these 209 index children, a control child was selected as described. Any subsequent younger siblings of the index and control children were also "studied in a direct way, without relying on mother's interview but by observing the younger siblings." Findings from both the interview and observation methods of study "showed that the incidence of convulsions among siblings of index children is three to four times higher than among siblings of the control children."

506. van den Berg, Bea J., and Yerushalmy, J.: "Studies on Convulsive Disorders in Young Children. V. Excess of Early Fetal Deaths Among Pregnancies Preceding the Birth of Children with Febrile or Nonfebrile Convulsions," *Journal of Pediatrics*, 84:837-840, June, 1974.

Data from the Child Health and Development Studies (CHDS) were studied to compare the reproductive performance of women who had children with febrile and nonfebrile convulsions with that of women who had children who did not have convulsions. A total of 7,369 mothers satisfied the following two conditions: "(1) their first CHDS pregnancy ended in a liveborn, surviving infant and (2) they had had at least one previous pregnancy." In this group, there were 235 'first CHDS children' who had convulsions during the first six years of life (162 febrile, 73 nonfebrile). Control children were matched with these index children as described. Comparison was then made between the outcomes of the pregnancies preceding the births of these children. "The frequency of prior early fetal deaths had been considerably greater among the mothers each of whom subsequently gave birth to a child who had seizure activity within the first six years of life than it had been among mothers of the selected control children, none of whom had had a seizure."

507. VanderVeer, Beverly, and Schweid, Edda: "Infant Assessment: Stability of Mental Functioning in Young Retarded Children," *American Journal of Mental Deficiency*, 79:1-4, July, 1974.

In order to determine the predictive utility of the Bayley Scales of Infant Development, 23 children ages 18 to 30 months for whom there was concern about mental retardation, were administered this test. Then either the Bayley Scales or the Stanford-Binet was administered a minimum of one year later. Findings on the original evaluation indicated 15 of the 23 patients were functioning in the moderate to profound retarded category. Eleven (73%) remained in this category at follow-up. "None of the children initially functioning in any of the retarded ranges were 'normal' at follow-up. Results were discussed in terms of the utility of the Bayley Scales of Infant Development in diagnosing mental retardation and the resistance to change of impaired intellectual ability." "The present study strongly supports the utility of infant developmental testing for identifying children with suspected mental or developmental retardation." "From the consistency of the present test-retest scores, the conclusion is inescapable that deficient mental capacities represent aspects of an organism which are particularly resistant to change. Basic biological mechanisms should perhaps be accorded highest priority in terms of research into intervention at this point."

508. Van Vunakis, Helen; Langone, John J.; and Milunsky, Aubrey: "Nicotine and Cotinine in the Amniotic Fluid of Smokers in the Second Trimester of Pregnancy," *American Journal of Obstetrics and Gynecology*, 120:64-66, September 1, 1974.

Using radioimmunoassays, the levels of nicotine and one of its principle metabolites, cotinine were measured in amniotic fluid samples obtained from 100 women during the second trimester of pregnancy. Of these 100 women, 37 were smokers and 63 were not. "Of the 37 samples collected from smokers, 22 contained nicotine in concentrations ranging up to 31 ng. per milliliter and 33 contained cotinine in concentrations ranging up to 129 ng. per milliliter.

These compounds were not detected in fluid from 63 nonsmokers." This series of patients was too small to draw any conclusions relative to pregnancy outcome.

509. Vardi, J., and Halbrecht, I.: "Toxemia of Pregnancy. I. Antigens Associated with Toxemia of Pregnancy in Placental Connective Tissue," *American Journal of Obstetrics and Gynecology*, 218:552-558, February 15, 1974.

The antigenic components of the placental connective tissue were analyzed from the placentas of six full term pregnancies which were complicated by severe pre-eclampsia (4) or eclampsia (2) and from the placentas of six control full term normal pregnancies. Methods are described. "It was found that the toxemic placental connective tissue contains all the antigens found in the normal placental connective tissues and two additional antigens. These antigens associated with toxemia of pregnancy were absent, or present in very small amounts, in placentas after uncomplicated gestation. With the fluorescent antibody technique, some differences were shown in the staining pattern of the blood vessels and the stroma of the toxemic placentas. It was concluded that toxemia of pregnancy indicates connective tissue disturbances in the fetal-placental unit."

510. Vicker, Beverly A., ed.: *Nonoral Communication System Project 1964-1973.* Iowa City, Iowa: University of Iowa, 1974. 261 pp. plus Appendices.

This volume contains five papers on nonoral communication. With the exception of the first paper written by the editor on the topic of "The Communication Process Using a Nonoral Means," the papers are concerned with the Nonoral Communication System Project and its development at the University of Iowa Hospital School. The project was begun in 1964 to provide a program of communication therapy for the cerebral palsied children at the School having severe dysarthria. Paper Number II in the volume is written by Annette Geith Kladde and is entitled, "Nonoral Communication Techniques: Project Summary #1, August 1967." The third paper, by Beverly Vicker, describes the "Advances in Nonoral Communication System Programming: Project Summary #2, August 1973." In the fourth paper the role of the occupational therapist in the custom designing of communication board frames is explained by JoAnn Schurman. The final paper, by Beverly Vicker, contains a case report of "Communication Board Programming with a Four-Year-Old Child." There are three appendices which accompany the book. Appendices A and B contain sample communication display materials from 1964-1967 and 1967-1973, respectively. Appendix C contains diagrams of communication board display frames.

511. Volpe, Joseph: "Neonatal Seizures," *New England Journal of Medicine*, 389:412-416, August 23, 1973.

The clinical features, etiology, diagnosis, prognosis, and treatment of neonatal seizures are discussed.

512. Wald, N.J.; Brock, D.J.H.; and Bonnar, J.: "Prenatal Diagnosis of Spina Bifida and Anencephaly by Maternal Serum-Alpha-Fetoprotein Measurement," *Lancet*, 1:765-767, April 27, 1974.

Sera was obtained and stored from women attending an Oxford prenatal clinic in 1973. Of these women, seven had infants with either anencephaly (2) or spina bifida (5). Each of these seven pregnancies were matched as described with two control pregnancies, and the sera from these 21 cases were analyzed. Findings indicated that in each of the seven affected cases the maternal serum-alpha-fetoprotein (A.F.P.) was higher than in either of the two matched controls. In six of the seven affected pregnancies the first serum sample had been obtained as early as the 15th to 18th week of gestation. the A.F.P. levels were seen to fall later in pregnancy in the three cases of stillborn infants (2 anencephalic and 1 spina bifida), but remained high in the four pregnancies resulting in live-born infants with spina bifida. "The findings support previous suggestions that maternal serum - A.F.P. levels may be useful in screening for central-nervous-system malformations."

513. Walker, W.; Ellis, M.I.; Ellis, E.; Curry, A.; Savage, R.D.; and Sawyer, R.: "A Follow-Up Study of Survivors of Rh-Haemolytic Disease," *Developmental Medicine and Child Neurology*, 16:592-611, October, 1974.

Selected for follow-up study were 300 children, ages seven to 14 years, out of a group of 1476 children who had survived Rh-hemolytic disease as newborns. This group of 300 included "all surviving children who had been very severely affected and comparable numbers of those who had had severe, moderate, or mild disease." Methods and areas of examination are explained. Results are presented concerning the occurrence of kernicterus, physical examination, psychological examination, hearing, congenital deafness not associated with hemolytic disease, speech and language assessment, reading assessment, and other abnormalities attributable to hemolytic disease. "Significant abnormalities were found in 32 children but in only 11 cases were these defects attributable to haemolytic disease: four had kernicterus and seven had severe sensori-neural hearing loss. Because of the inclusion of all high-risk patients in the sample of 300, these 11 children probably closely represent the total morbidity in all 1476 survivors. Minor specific abnormalities were recognised in other children but were not of social significance nor necessarily due to haemolytic disease." "The policy of antenatal prediction, delivery in special units and selective early exchange is, we believe, vindicated by the results of this follow-up study."

514. Wallace, Sheila J.: "Recurrence of Febrile Convulsions," *Archives of Disease in Childhood*, 49:763-765, October, 1974.

Studied and followed were "116 children who did not receive anticonvulsants after their first febrile convulsion." The children were grouped according to described criteria, and a number of possible predisposing factors were assessed. Of these 116 patients, 55 (47%) were found to have a recurrence of the febrile convulsions with a subsequent illness. "A significantly increased risk is present in (a) those with persistent neurological abnormality, (b) those who have had a complicated initial fit, (c) males with a positive history of convulsive disorder in parents and/or sibs, and (d) females with age of onset of less than

19 months. It is suggested that the findings could be used for selecting children with a high rate of recurrence for continuous anticonvulsant therapy."

515. Wallace, Sheila J.: "The Reproductive Efficiency of Parents Whose Children Convulse When Febrile," *Developmental Medicine and Child Neurology*, 16:465-474, August, 1974.

Studied and compared were the reproductive histories of the parents of 108 children who convulsed when febrile (patients) and the reproductive histories of the parents of 33 children who had febrile illnesses but did not convulse (controls). All children were admitted to the hospital. The information obtained from these cases concerning reproductive capacity is outlined, and data analysis methods are explained. Among the findings was the fact that "chronic ill-health from disorders likely to affect the fetus was found significantly more often in the mothers of the patient group." Also findings indicated that "sub-optimal maternal states prior to conception, or in the child's early intra-uterine life, seem to be sufficient to predispose the male, with his increased vulnerability, to convulsions if he becomes febrile."

516. Wallin, Anders; Jalling, Birgitta; and Boréus, Lars O.: "Plasma Concentrations of Phenobarbital in the Neonate During Prophylaxis for Neonatal Hyperbilirubinemia," *Journal of Pediatrics*, 85:392-397, September, 1974.

Phenobarbital was administered daily as described to 11 neonates during the first week of life as a routine prophylaxis program for hyperbilirubinemia. These infants had no signs of disease during the first hours of life and were from 33 to 37 weeks of gestational age. Plasma concentrations of phenobarbital were then determined using a gas-liquid chromatography method. Serum bilirubin levels were also determined, and six patients received phototherapy. "The plasma curves were found to be strikingly uniform in all infants. Plasma accumulation occurred throughout the period of administration and steady state was not achieved. The phenobarbital peak level in plasma always occurred later than that of bilirubin. It is suggested that dosage regimens should be so constructed that the drug may exert its maximal effect very early after birth."

517. Wallner, H.J.: "The Fate of the Child After Threatened Abortion," *Journal of Perinatal Medicine*, 2:54-60, 1974.

A total of 615 women (3 series), who were treated for threatened abortion but carried the pregnancy to term, were studied concerning the obstetric results and the later condition of their children. These cases were contrasted to 10,000 unaffected pregnancies. Findings are presented regarding the frequency of premature birth, the incidence of perinatal mortality, and the incidence of fetal anomilies. Some of the offspring of the original series were later clinically examined, and findings are reported regarding neonatal mortality, retardation of development and weight, delayed ossification, ophthalmological findings, intellectual development, and EEG findings. "There can be little doubt that bleeding during the first half of the pregnancy interferes with the development of the conceptus. This can lead not only to obstetric complications but also to a retarded development of the affected children."

518. Walsh, S. Zoe; Meyer, W.W.; and Lind, John: *The Human Fetal and Neonatal Circulation: Function and Structure.* Springfield, Ill.: C.C. Thomas, 1974. 351 pp. (American Lecture Series, No. 870; American Lectures in Cerebral Palsy.)

"The aim of this monograph is to review and discuss certain physiological aspects of cardiovascular adaptation of the human fetus and newborn, particularly in relation to anatomic structure." The 16 chapters are presented in the following three sections: fetal circulation, neonatal circulation, and arteries and veins in the newborn and infant. There are many photographs, including a group of color plates; an appendix containing tables; and subject and name indexes. Reference lists are frequent and lengthy.

519. Watanabe, Kazuyoshi; Iwase, Katsuhiko; and Hara, Kimiko: "Development of Slow-wave Sleep in Low-birthweight Infants," *Developmental Medicine and Clinical Neurology*, 16:23-31, February, 1974.

The duration and percentage of slow-wave sleep and "tracé alternant (discontinu)" were studied from a total of 223 EEG's from 27 pre-term, appropriate-for-dates infants; 72 small-for-dates infants; and two full-term hypoxic infants. The following results were presented: "(1) The duration of quiet sleep was constant between 32 weeks and 45 weeks' conceptional age. (2) The slow-wave sleep pattern emerged from quiet sleep at about 35 to 36 weeks and gradually increased thereafter to replace immature trace alternant at 44 to 45 weeks. (3) Small-for-dates infants of toxemic mothers showed delayed maturation compared with those of non-toxemic mothers and pre-term appropriate-for-dates infants of the same age. (4) The two hypoxic infants had abnormal sequences of development of slow-wave sleep. Depending upon the degree of hypoxic damage, slow-wave sleep was affected to a variable degree. (5) The development sequence of slow-wave sleep is one of the useful indices of the maturity of the central nervous system of the newborn infant, though it is unreliable for the assessment of conceptional age because of the considerable individual variability."

520. Weidinger, H., and Wiest, W.: "A Comparative Study of the Epidemiological Data of Pregnancies With and Without Tendencies to Premature Delivery," *Journal of Perinatal Medicine*, 2:276-287, 1974.

An attempt was made to statistically analyze factors that occur in above average frequency in women who have premature delivery. Studied were 469 pregnancies which ended in premature delivery, as defined, and 472 pregnancies which ended in the birth of babies having normal birth weight. A questionnaire, consisting of 160 areas of information, was given to these women. Findings are presented. Computer analysis revealed some 18 factors, listed in the Summary, that "especially predisposed to premature delivery, with a probability of error less than 0.0005." Findings are compared to those of other similar studies.

521. Weiner, Florence. *Help for the Handicapped Child.* New York: McGraw-Hill, 1973. 221 pp.

This volume is a reference source on handicapping conditions in children and services offered. In Part One, 25 childhood handicaps are considered individually, including a description of the condition, the treatment, prognosis, medical progress, future medical goals, drug therapy, tests to be given, services

offered to patients and parents relating to the specific handicap, and vocabulary terms used in association with the specific condition. In Part Two, "general information" is presented on community services, state services for handicapped children, government services, health plans and insurance, recreation for the handicapped, and emergency services.

522. Weiss, Robert R.; Duchin, Sybil; Evans, Mark I.; Finkelstein, Frances; and Mann, Leon I.: "Amniotic Fluid Uric Acid and Creatinine as Measures of Fetal Maturity," *Obstetrics and Gynecology*, 44:208-214, August, 1974.

Amniotic fluid samples were obtained from 111 normal patients at various stages of gestation ranging from ten weeks of gestation to term, and the uric acid and creatinine concentrations were determined as described. These values were then compared with the gestational age of the fetus and the weight of the fetus. Findings are reported and discussed, and conclusions are listed. "Our data indicate that both uric acid and creatinine levels in amniotic fluid rise sharply up to the 36th week of gestation or 2500 g. of birthweight. With further increase in gestational age or birthweight, both uric acid and creatinine either maintained their peak levels or showed a slight decrease (statistically insignificant). It is concluded that a uric concentration of 10 mg./100 ml. or more in the amniotic fluid would reliably predict a fetal gestational age of 36 weeks in 85% of patients."

523. Wheeless, Clifford R., Jr.: "Use of the Laparoamnioscope for Fetal Observation and Its Effect on the Human Fetus," *American Journal of Obstetrics and Gynecology*, 119:844-848, July 15, 1974.

The potential usefulness of this technique for observing the fetus and biopsy are discussed. Results of its usage with a small group of patients, who were to undergo therapeutic abortion and total abdominal hysterectomy, are described.

524. White, J.C., and Tharp, B.R.: "An Arousal Pattern in Children with Organic Cerebral Dysfunction," *Electroencephalography and Clinical Neurophysiology*, 37:265-268, September, 1974.

Described in this article is an EEG pattern which was found to occur during arousal from sleep in eight children, ages two to 14 years, who had been diagnosed as having minimal cerebral dysfunction or a seizure disorder, as explained. The EEG findings in these cases are described. "It is suggested that the arousal state deserves study in all children utilizing montages containing the frontal electrodes."

525. White, Priscilla: "Diabetes Mellitus in Pregnancy," *Clinics in Perinatology*, 1: 331-347, September, 1974.

Considered in this review article are the "effect of pregnancy upon the course sequelae or concomitants of diabetes;" the infant of the diabetic mother; methods used to classify pregnant diabetics; the management of the pregnant diabetic and her infant; and the future of this disease.

526. White, Silas D.: "A Modular Communication Device for Paralyzed Patients," *Archives of Physical Medicine and Rehabilitation*, 55:94-95, February, 1974.

The unit design and assembly of an electromechanical communicator are described. It was used successfully with a paralyzed nonvocal patient. "Rather than developing a fixed piece of hardware applicable to all patients with similar problems, the use of these modules allows the apparatus to be modified quickly and easily at the bedside to suit the needs and capabilities of the individual patient at relatively little cost." The equipment and its use with a patient are pictured.

527. Whyley, G.A.; Ward, Humphry; and Hardy, N.R.: "Alpha-Fetoprotein Levels in Amniotic Fluid in Pregnancies Complicated by Rhesus Isoimmunization," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:459-465, June, 1974.

A total of 249 samples of amniotic fluid were obtained from 71 patients between 20 to 35 weeks of gestation. Alpha-fetoprotein (AFP) levels were estimated as described. The bilirubin and protein content of the amniotic fluid were also determined. Of these 71 women, 60 had rhesus isoimmunization. The patients were classified as follows according to the severity of their disease: unaffected (11), mild disease (8), moderate disease (15) and severe disease (37). "No difference was found between the AFP levels in unaffected pregnancies, pregnancies complicated by mild or moderate disease or in severe rhesusisoimmunization when the baby survived." Of the 37 severely affected pregnancies, 19 ended in either intrauterine fetal death or neonatal death. Of these 19 cases, 8 (42%) had one or more AFP levels above 5.5 mg./ml. "In the most severely affected cases a correlation existed between the amniotic fluid AFP levels and both the optical density difference (Δ) at 450 mμ and protein concentration in the liquor amnii. Erroneously elevated amniotic fluid levels of AFP may be found when the fluid has been contaminated by ascitic fluid or fetal blood. It is suggested that the level of AFP in amniotic fluid taken in conjunction with the Δ 450μ peak might be a valuable guide in identifying the severely affected pregnancy in which the fetal prognosis is grave."

528. Wilfert, Catherine M., and Gradoville, M. Lyndle, "In Vitro Viral Studies of Cells Grown From Human Amniotic Fluid Samples," *American Journal of Obstetrics and Gynecology*, 118:1073-1080, April 15, 1974.

Studies on 12 amniotic fluid samples were undertaken as described to determine some characteristics of the fluid and its cells which might be related to intrauterine viral infections. Results are presented with regard to the attempts made to isolate viruses in the amniotic fluid, the growth of amniotic fluid cells, the attempt made to infect amniotic fluid cells with different viruses, and the examination of the amniotic fluids for immunoglobulin content and the presence of viral antibodies. "Amniotic fluid cells were established in culture from 8 amniotic fluid samples, and 4 cell lines were found to be susceptible to infection by 9 animal viruses." "Amniocentesis should be considered as a useful diagnostic procedure for possible intrauterine viral infections. When this procedure is accomplished, inoculation of amniotic fluid into tissue culture systems, the culture of amniotic fluid cells, and assay, of immunoglobulin content should be attempted as part of the evaluation of the fluid."

529. Wilson, James G. *Environment and Birth Defects.* New York: Academic Press, 1973. 305 pp. (Environmental Sciences Series.)

"The aim of this book is to provide information that will be needed in evaluating environmental factors that may represent risks to unborn generations." Aspects considered in the ten chapters include the "causes of developmental abnormality," the "mechanisms of teratogenesis," "manifestations of abnormal development," the "access of environmental factors to developing tissues," "normal development and susceptible periods," and "the assessment of teratologic risk." Methods of collecting and interpreting results, and "suggested protocals for embryotoxicity testing" are also described. There are three appendices. Appendix I is a list of "selected references on embryology and reproduction of laboratory animals." There is also a bibliography, an author index, and a subject index.

530. Wingate, M.B.; Wingate, L.; Iffy, L.; Freundlich, J.; and Gottsegen, D.: "The Effect of Epidural Analgesia Upon Fetal and Neonatal Status," *American Journal of Obstetrics and Gynecology*, 119:1101-1106, August 15, 1974.

Studied was the intrauterine and neonatal status of fetuses from 72 patients who received epidural analgesia, as described, during labor. The neonates were observed until the day of discharge from the hospital. Methods of study are explained. A control group of 100 patients was also studied. Of the 72 patients in the study group, 28 (38.8%) developed hypotension. "Significant fetal heart rate (FHR) decelerations were seen in 55 per cent of the study patients; these occurred most frequently in those patients who developed hypotension (71 per cent) but also developed in 40 per cent of those patients whose blood pressure remained stable. The most common significant FHR pattern was that of late deceleration, occurring in 33.3 per cent of the study group of patients. Of the neonates from the study group of mothers, 9.7 per cent had low Apgar scores compared to 17 per cent of the control neonates. The majority recovered shortly after the 5 minute Apgar observation and continued normally until the day of discharge." Implications are considered.

531. Wladimiroff, J.W., and Campbell, Stuart: "Fetal Urine-Production Rates in Normal and Complicated Pregnancy," *Lancet*, 1:151-154, February 2, 1974.

The hourly fetal urine production rate (H.F.U.P.R.) was measured as described between 30 and 41 weeks of pregnancy in 92 normal patients and 62 patients having listed complications of pregnancy. Findings are presented for each of these two groups. In the normal patients the mean H.F.U.P.R. was found to rise rapidly and linearly during the study period. In 29 of the 62 patients having complications "the H.F.U.P.R. was below the lower 5% tolerance limit for normal fetuses; there was a highly significant increase in the number of growth-retarded babies in this group, but no correlation was found between reduced H.F.U.P.R. values and perinatal hypoxia."

532. Wolff, Peter, and Wolff, Elizabeth Ann: "Correlational Analysis of Motor and Verbal Activity in Young Children," *Child Development*, 43:1407-1411, December, 1972.

In this study, teachers rated their 4 and 5 year old nursery school and kindergarten children on motor activity (gross motor, fine motor, and manual dexterity) and on verbal behavior (verbal output and verbal skill). Rating methods are described. "Highly significant correlations were found between quantity of verbal output and quantity of gross activity on the 1 hand and between sophistication of language and incidence of fine manipulative activity on the other. The remaining correlations were relatively low, and, with 1 exception, nonsignificant. A functional relationship between the verbal and motoric systems is consistent with, although not implied by, this correlational pattern."

533. Wooldridge, Carl W.: "Platform Walker with Proximal Forearm Hooks," *Physical Therapy*, 54:968-969, September, 1974.

The addition of platforms with or without proximal forearm hooks to a walker has been found useful in aiding patient mobility and stability. The walker is pictured.

534. Worster-Drought, C. *Suprabulbar Paresis; Congenital Suprabulbar Paresis and Its Differential Diagnosis, with Special Reference to Acquired Suprabulbar Paresis.* London: Spastics International Medical Publications in association with Heinemann Medical Books, 1974. 33 pp. (Supplement to *Developmental Medicine and Child Neurology*, No. 30.)

In Chapter 1, congenital suprabulbar paresis is defined and its clinical features and differential diagnosis are explained. The condition of acquired suprabulbar paresis is also considered, the speech of children with suprabulbar paresis is described, and the literature is reviewed. Two hundred cases of congenital suprabulbar paresis seen by the author are then analyzed, and the management of the condition is discussed, including surgical intervention and speech therapy. Case histories of both congenital and acquired suprabulbar paresis are then presented. Chapter 2 is entitled, "Palato-pharyngeal Disproportion: Pharyngomegaly and Congenital Short Soft Palate." The differential diagnosis of pharyngomegaly and its treatment are discussed, followed by the differential diagnosis of congenital short soft palate and its treatment. Case histories are then presented. A bibliography is included.

535. Wu, Paul Y.K.; Lim, Rosie C.; Hodgman, Joan E.; Kokosky, Mary J.; and Teberg, Annabel J.: "Effect of Phototherapy in Preterm Infants on Growth in the Neonatal Period," *Journal of Pediatrics*, 85:563-566, October, 1974.

Studied were 120 preterm infants who were randomly placed in one of the following three groups: Group 1 were controls and received no phototherapy; Group 2 received continuous phototherapy for five days; and Group 3 received intermittent phototherapy for five days. Other care methods and tests performed on these infants are described. Birth weight was regained and surpassed at the end of one week by 80% of the infants in Group 1, 44% in Group 2, and 57.6% in

Group 3. Infants in Groups 2 and 3 had significantly higher mean weight gains in the second and third weeks than did the infants in Group 1. Data is also presented on body length and head circumference. "Data suggest decreased growth during phototherapy with subsequent catch-up in growth during weeks 2 and 3. Differences were less marked between infants on intermittent (rather than continuous) phototherapy and controls. Increased metabolic demands and decreased intestinal absorption during phototherapy may be two of the factors responsible for the observed differences in growth in the three groups."

536. Wyszogrodski, Issie; Taeusch, H. William, Jr.; and Avery, Mary Ellen: "Isoxsuprine-Induced Alterations of Pulmonary Pressure-Volume Relationships in Premature Rabbits," *American Journal of Obstetrics and Gynecology*, 119:1107-1111, August 15, 1974.

Twenty-eight-day-old rabbit fetuses received either isoxsupine hydrochloride or saline injections as described three hours before being delivered by cesarean section. Term is 31 days. After being allowed to breathe room air for 20 to 30 minutes, the newborns were sacrificed. When the drug-treated newborns were compared to the saline-treated newborns, it was seen that the lungs of the drug-treated animals, "retained more air on deflation, i.e., were more stable, than those of control animals that received saline. These findings are consistent with an increase alveolar surface active material in the drug-treated group, and indicate that isoxsupine may enhance the release of surface active material into the alveolus that normally occurs at birth."

537. Yaffe, Sumner J.: "Fetal and Neonatal Pharmacology," *Clinics in Perinatology*, 1:39-45, March, 1974.

Recent studies and advances in the field of fetal pharmacology are reviewed, and current knowledge concerning drug dispositon in the neonate is summarized.

538. Yao, Alice C., and Lind J.: "Blood Volume in the Asphyxiated Term Neonate," *Biology of the Neonate*, 21:199-209, 1972.

Studied were 12 full-term neonates whose births were complicated by perinatal asphyxia. Blood volume (BV) was measured in all 21 infants, and placental residual blood volume (PRBV) was measured in eight of the cases. Cord clamping was classified as being early in all of the cases. The infants and the methods used are described. Findings indicated there to be significantly greater mean blood, red cell, and plasma volumes in these 12 infants than was found in "normal infants' whose umbilical cords were clamped at a comparable time after birth; these values were closer to those of late-clamped normal infants'." In the more severely asphyxiated infants, the PRBV was lower than normal. "In support of results of our previous studies and those of others, it is suggested that prenatal redistribution of the placental blood to the fetus in utero played a major role among other mechanisms in bringing this about."

539. Yao, Alice C., and Lind, John: "Placental Transfusion," *American Journal of Diseases of Children*, 127:128-141, January, 1974.

Initially considered in this review article is the mechanism of placental transfusion, including the various factors that regulate it. Then explained are the responses seen in the extrauterine adjustment of the neonate as a result of variations in placental transfusion (early versus late clamping). The next section of the article is devoted to a discussion of placental transfusion in specific perinatal complications, including placental transfusion in infants of diabetic mothers, in cesarean section births, in cases of perinatal asphyxia, in premature infants, and in infants who develop idiopathic respiratory distress syndrome. The article concludes with a discussion of the question, "when should umbilical cords be clamped?"

540. Yeager, Anne S.: "Transfusion-Acquired Cytomegalovirus Infection in Newborn Infants," *American Journal of Diseases of Children*, 128:478-483, October, 1974.

Studied regarding the risk of acquiring cytomegalovirus (CMV) infection after having had blood transfusion were 151 infants who were cared for in the Premature-Sick Newborn Nursery at Colorado General Hospital. Seventy-four of these 151 infants had not had transfusions while 77 had had transfusions. All infants were followed-up at seven months of age. At this time eight (11%) of the 74 infants in the group who had not received blood transfusions were infected with CMV, and 19 (25%) of the 77 infants in the blood transfusion group were so infected. Of these 19 infections, "six are believed to have been acquired from a source other than the mother, probably from blood products. The risk of acquiring a CMV infection in this manner needs to be further delineated, as does the risk of such babies infecting susceptible pregnant women in their environment."

541. Yeh, S.Y.; Paul, R.H.; Cordero, L.; and Hon, E.H.: "A Study of Diazepam During Labor," *Obstetrics and Gynecology*, 43:363-373, March, 1974.

Diazepam was administered as described to 31 obstetric patients during labor, and biophysical and biochemical techniques were used to determine the effects on the mothers, fetuses, and newborns. The 31 patients were divided into Group I, which contained 16 patients who were studied biophysically, and Group II which contained 15 patients who were studied both biophysically and biochemically. Procedures are explained. Findings are reported regarding the general effect of the diazepam, the effect on uterine contractions, the effect on both the fetal and maternal cardiovascular systems, the blood biochemical results, the drug levels found in the mothers and fetuses after diazepam was administered, and the condition of the neonates. Conclusions are listed. "Diazepam caused a mild transitory tachycardia and a marked decrease in the beat-to-beat heart rate interval in both mother and fetus. No adverse effects were noted in the blood pH, pO_2, pCO_2, and base deficit of the mother, fetus, or newborn following drug administration. The effect of diazepam on uterine activity could not be determined from this study. No adverse effect of diazepam on the neonatal outcome was found."

542. Yeh, Sze-Ya; Jilek, Jiri; and Hon, Edward H.: "On-Line Diagnosis of Ominous Fetal Heart Rate Patterns: A Warning Device," *American Journal of Obstetrics and Gynecology*, 118:559-563, February 15, 1974.

Described is a warning device that was "developed for the on-line detection of ominous fetal heart rate (FHR) patterns." The system logic and system design are explained. Twenty consecutive obstetric patients were studied with regard to 1,600 uterine contractions and the associated FHR patterns. A trained observer visually diagnosed and classified the FHR patterns seen, and the diagnoses made by the warning device were also classified. "When no ominous FHR deceleration patterns were present, the instrument diagnoses agreed with those of a trained observer over 93 per cent of the time. When ominous FHR deceleration patterns were present, some type of FHR deceleration pattern was diagnosed in a high percentage of instances: variable deceleration, 71 of 73; late deceleration episodes (2 or more late decelerations), 57 of 57; mixed variable and late deceleration, 146 of 147." "The preliminary evaluation of this equipment that, while its accuracy for the diagnoses of specific FHR deceleration patterns is not high, as a clinical warning device it may be quite useful since the number of times it detects an ominous FHR deceleration of some type is very high."

543. Ylikorkala, O.; Kauppila, A.; and Tuimala, R.: "Effect of Dexamethasone on Serum Levels of Human Placental Lactogen During the Last Trimester of Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 81:368-370, May, 1974.

When dexamethasone was administered orally as described four times daily to 12 mothers for 6 to 12 days in the last trimester of pregnancy, serum human placental lactogen levels were not found to change. Data on these women are presented. They were expected to deliver premature infants and were given dexamethasone to prevent respiratory distress syndrome. Implications are considered.

544. Zachman, Richard D., and Graven, Stanley N.: "A Neonatal Intensive Care Unit," *American Journal of Diseases of Children*, 128:165-170, August, 1974.

Summarized is the first four years of operation of the regional Neonatal Intensive Care Unit in Madison, Wisconsin. This facility is located in a private hospital and includes a normal newborn nursery, a 12 to 24 hour observation unit, and the regional NICU. Forty-five percent of the newborns admitted to this NICU were admitted for respiratory distress, 21% for hyperbilirubinemia, and 10% for surgery. Twenty-five percent of the patients admitted died. Much additional information on the unit is presented in the text of the article and in charts and graphs.

545. Zellweger, Hans: "Anticonvulsants During Pregnancy: A Danger to the Developing Fetus?" *Clinical Pediatrics*, 13:338-341+, April, 1974.

A case report is presented, and the literature is reviewed relative to the three categories of disorders that "have been described in infants whose mothers had received anticonvulsive medication during pregnancy: (1) chromosomal aberrations, (2) bleeding disorders, and (3) malformations."

546. Zelson, Carl: "Infant of the Addicted Mother," *New England Journal of Medicine*, 288:1393-1395, June 28, 1973.

Maternal drug addiction is discussed as to its incidence and consequences. Infants born to heroin-addicted and methadone-addicted mothers often display the characteristic withdrawal symptoms with these signs occurring more frequently in the infants of methadone-addicted mothers. On the basis of observations made by the author and his co-workers at the New York Medical College-Metropolitan Hospital Center, they "believe that infants born to methadone-addicted mothers are more seriously affected by the intrauterine exposure than those born to heroin-addicted mothers." Treatment is described.

547. Zuckerman, Henry K., and Rubinstein, Igal: "Inhibition of Human Premature Labor by Indomethacin," *Obstetrics and Gynecology*, 44:787-792, December, 1974.

Indomethacin was administered as described to 50 women displaying clinical evidence of premature labor. Cervical dilation in these patients at the time of administration ranged from closed to 5 cm. Membranes were prematurely ruptured in 13 of the patients. The clinical history of these patients and the outcome of their pregnancies are described. "The indomethacin had a marked effect on the uterine contractions, stopping them completely in 40 of the patients. The infant salvage rate was good: 38 mature infants, 12 immature. There were 4 neonatal deaths and 1 stillbirth."

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